

INDOOR AIR POLLUTION AND HEALTH FORUM NEPAL

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A QUARTERLY NEWSLETTER OF INDOOR AIR POLLUTION AND HEALTH FORUM NEPAL

Indoor Air Pollution and Health Forum Nepal (IAPHFN)

As an outcome of an one day workshop organised by Practical Action Nepal, IAPHFN was established in March 2005 under the chairmanship of Dr. Mrigendra Raj Pandey. IAPHFN has the objective of conducting studies including researches and influencing policies to address the underlying issues related to often neglected indoor air pollution and health sector. The Forum maintains a strong network with organisations having similar goals and works collaboratively to achieve its wider objective of raising awareness and bringing effective changes in policies for mitigating indoor air pollution and health related problems.

The Forum has seven executive members representing Centre for Energy Studies, Centre for Rural Technology Nepal, Mrigendra Samjhana Medical Trust, Nepal Forum of Environmental Journalists, Practical Action Nepal and Winrock International Nepal institutionally, and Mr. Rewati Sapkota independently as a media professional. Practical Action Nepal functions as the Secretariat of the Forum since its establishment.

Vision

Healthy indoor environment in all Nepalese households.

Mission

Save people's life, especially women and children below five years who are vulnerable to the consequences of indoor air pollution.



Forum's Activities:

- A two day South Asia Regional Workshop on Indoor Air Pollution and Household Energy was held from 27 to 28 February 2006 in Kathmandu with the objectives of analysing policy gaps, and sharing relevant knowledge and information. More than 90 individuals from Bhutan, Bangladesh, India, Pakistan, Sri Lanka, Nepal and Indonesia participated in the workshop. Similarly, participants were also from Practical Action UK, United States Environment Protection Agency (USEPA), and The Massachusetts Institute of Technology (MIT), USA. *The proceedings of the workshop is available online at: http://www.indoorair.org.np/report_southasia_workshop.pdf.*
- A half day talk programme on "Household Fuels, Health, Climate Change and Millennium Development Goals" was held on 12 August 2006 in Kathmandu. The key speaker of the programme was Prof. Dr. Kirk Smith, University of California, Berkeley. Seventy-five individuals from various organisations participated in the programme.
- IAPHFN recently conducted studies on "Design Improvement of Smokehoods"; "Inventory of Innovative Indoor Smoke Alleviating Technologies in Nepal"; "Policy Gaps in Household Energy and Indoor Air Pollution in Bangladesh, India, Nepal, Pakistan and Sri Lanka"; and "Policy Research on Household Energy and Indoor Air Pollution in South Asia".
- A two day Workshop on "Policy Gaps on Household Energy, Indoor Air Pollution and Health in South Asia" was organised from 20 to 21 February 2007 in Kathmandu. The findings of "Policy research on Household Energy, and Indoor Air Pollution," a study conducted in Bangladesh, India, Nepal, Pakistan and Sri Lanka was also shared in the workshop. Fifty individuals, including policy researchers from the above mentioned countries participated in the workshop.

Message from the Chairperson

It gives me great pleasure to express a few words in the first issue of the IAP newsletter. Globally, indoor air pollution is among the four greatest life takers a major contributing factor of many fatal diseases. It is a sad fact that in many developing countries, indoor smoke is still very much a part of everyday life.



Women spend considerable amount of time indoors while cooking and performing other household chores and the young children while staying close to their mothers, also end up breathing in the polluted air. Hence these two groups are the most vulnerable ones to the hazards of indoor air pollution. Poverty and unavailability of biomass; indifference of the policy makers towards the gravity of this problem; lack of funds at the government level to address the problem; and low status of women and children in many poor communities are the major reasons for this issue not gaining the attention that it deserves.

Nepal is among the highest traditional fuel consuming countries in Asia. Large segment of the people still depend on simple and primitive; low combustion efficient and locally fabricated biomass fuel combustion devices which causes considerable indoor air pollution. The concentration level of pollution in Nepalese homes is very high compared to both international and national recommended standards.

Since the 1970s, important researches including policy related issues along with awareness activities/campaign on the effect of indoor air pollution and its mitigation effort have been conducted in Nepal by various individuals and organisations. But Nepal still lacks specific policies to address this issue. It was also observed that the lack of coordination of various organisations resulted in unnecessary duplication of efforts and inefficient use of limited resources. Keeping these facts in mind, this IAPH Forum was established in March 2005 with the objective to improve the health of rural people and work in collaboration to bring effective national policies and programmes. Since its establishment, the Forum in association with Practical Action Nepal conducted a couple of workshops, a talk programme and some research studies. But, there is still a lot to be done to promote healthy Nepalese home.

Improving health by mitigating indoor air pollution is one of the basic needs of the nation. I would like to request all the relevant organisations and individuals to contribute towards mitigating indoor air pollution.

Thank you.

Dr. Mrigendra Raj Pandey
Chairperson – Indoor Air Pollution and Health Forum Nepal

Studies

IAP Policy Gaps in South Asia

Practical Action Nepal commissioned regional policy studies in Bangladesh, India, Nepal, Pakistan and Sri Lanka with an objective to assess the existing energy and health related policies and their gaps that constraint indoor air pollution reduction initiatives in these countries. In this regard, the IAPHFN and Practical Action Nepal organised a consultative workshop from 20 to 21 February 2007 with the stakeholders and professionals working nationally in this field to discuss the findings and get feedback for finalising the studies in each of the countries.

The summary report on “Policy research on Household Energy, and Indoor Air Pollution in South Asia”, revealed the following findings and recommendations:

Findings

- Low priority has been given in reducing indoor air pollution.
- Insufficient data on the number of households suffering from indoor air pollution and its health impacts.
- Absence of clear cut explicit and supportive policy.
- Poor coordination among key stakeholders.

- Policy directive are technology focused with insufficient attention on the relevance of technology with human needs and available resources.
- Weak implementation arrangements in the absence of effective institutional structures.

Recommendations

- Effective and integrated policies need to be formulated to incorporate environment and health concerns.
- Regulatory framework is required to provide appropriate policy environment for private sectors to invest in energy infrastructure.
- Large-scale awareness raising campaigns and educational activities are required to deal with the existing information gap.
- Creation of enabling environment by the government, and awareness raising, monitoring, ensuring accountability and feedback by the non-government and academia sector needs to be carried out.
- A national level institution for research and development needs to be established.
- Technological interventions should be based on rural demography and on holistic approach. Alternative renewable technologies with more emphasis on bio-gas should be considered.
- A broad based research with a view to identify cross linkages, gaps and options are required in each country.

The full report is available online at: <http://www.indoorair.org.np/Policy%20gaps%20study%20summary%20report.pdf>

NEWS AND EVENTS

International Forum of Partnership for Clean Indoor Air (PCIA)

In response to the challenges caused by indoor air pollution, founding governments and organisations launched the Partnership for Clean Indoor Air (PCIA) at the World Summit on Sustainable Development in Johannesburg in September 2002. The third biennial PCIA forum was held from 20 to 23 March 2007 in Bangalore, India during which two organisations from Nepal were awarded in recognition of their services. Practical Action Nepal was awarded with the “**Global Leadership Award**” acknowledging the contribution it has made to lead the campaign on indoor air pollution across the globe. Similarly, Alternative Energy Promotion Center (AEPC) was awarded for awareness raising, monitoring, ensuring accountability and feedback for its contribution in reaching out to 250,000 improved cook-stoves to rural Nepalese households.

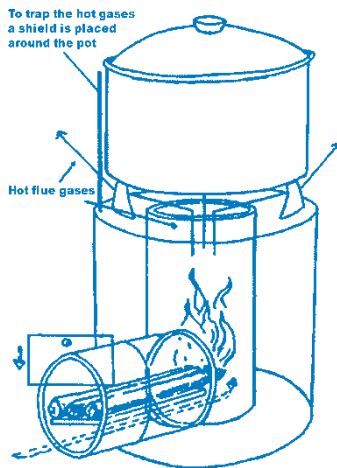


Technologies

Technology Brief - Rocket Stove

Rocket stove is a wood-burning cooking stove that generally has an ash insulated double wall metallic stove and can be built using tin cans or metallic buckets. Elbow is one of the key designs which can be constructed from metal pipe or ceramic materials. There is an insulated skirt around the pot whose height depends on the size of the pot which normally varies from 10 to 15 cm. The stove has a 12 cm diameter and 30 cm height combustion chamber. A narrow gap is maintained between the griddle and skirt to increase convective heat transfer.

The stove operates roughly twice as efficiently, and substantially more cleanly, than the open fire cooking methods still used in many villages of Nepal. Its cost varies from NRs. 1200



to 1500 and is best suited for high hills. Other advantages include portability and less emission and good combustion, hence improving local air quality and discouraging deforestation. However, the disadvantages include the fact that it can be expensive and requires fabrication in workshops in town or district headquarters.

Foundation for Sustainable Technology (FoST) and Center for Rural Technology Nepal (CRT/N) are some of the organisations that are involved in dissemination of this stove.

News

- Mr. Mark Whitaker (a BBC reporter) visited Practical Action Nepal project sites in Rasuwa from 22 to 25 March 2007 to report on the indoor air pollution problems in rural Nepal and available options to solve the problem.
- Mr. Han Heijnen, Environment Health Adviser, WHO Nepal visited Practical Action Nepal project sites in Rasuwa from 4 to 6 June 2007 to evaluate the project activities representing WHO. His article is available online at: http://www.searo.who.int/LinkFiles/SDE_Vol2_No6.pdf.
- A national seminar on "Community-Based Bio-Briquette (Banaspati Guintha)" was held from 30 to 31 May 2007. The seminar was jointly organised by the Federation of Community Forestry User Groups Nepal (FECOFUN), GEF/SGP programme of UNDP and Integrated Development Society Nepal. The abstract of the 9 papers presented during the seminar are available online at: <http://www.idsnepal.com.np>
- CleanAirSIG e-conference, an online conference on kitchen smoke alleviation was held from 16 to 27 July 2007. The conference was a joint initiation of Household Energy Network (HEDON) and Practical Action.
- Centre for Rural Technology Nepal (CRT/N) hosted National ICS Network meeting at Kathmandu Nepal on 31 July 2007.

Projects

Sustainable Smoke Alleviation Project

Practical Action Nepal has been involved in kitchen smoke alleviation activities since 2000. It started initially with a research and demonstration of Improved Cook Stoves for small scale agro-processing enterprises and in 2001, it started a research project called "Smoke, Health and Household Energy" in Gatlang village of Rasuwa district.

Practical Action started its 2nd Phase project 'Researching pathways to scaling up sustainable and effective kitchen smoke alleviation' in 2005 in the three countries (Kenya, Nepal and Sudan). In Nepal the project was carried out in Rasuwa district and its main objective was to identify critical factors required to enable large numbers of people to access clean technologies. The project applied mechanisms for creating a sustainable infrastructure for long-term delivery of smoke-alleviating interventions by promoting demand, facilitating purchase through credit and supporting production. As an outcome, till June 2007, about 5 local entrepreneurs are actively involved in manufacturing and

installation of smoke hoods and 450 households have purchased and installed the smoke hoods. There are 15 local revolving fund groups supported by Practical Action Nepal which provide loan to the locals for smoke hood installation. There is a subsidy of 35 per cent from the project and provision of payments in installment basis with 20 per cent down payment.

The results of the IAP monitoring and survey conducted in year 2006 suggest that there is about 88% reduction in the levels of carbon monoxide in kitchen after the intervention. Similarly, the levels of respirable particulate matters (PM_{resp}) has also reduced by 66 % after the intervention.

The District Development Committee (DDC), Rasuwa has signed a Memorandum of Understanding (MoU) with Practical Action Nepal in March 2007 to give continuity to its scaling-up and current subsidy. An 'Indoor Air Pollution Alleviation Fund' has also been created under the DDC Rasuwa.

(The project is the joint action of University of Liverpool, UK, World Health Organization - WHO and Practical Action)

Smoke Monitoring Methods

Monitoring carbon monoxide

Real time monitoring of carbon monoxide (Type D) can be used to detect colourless and odourless carbon monoxide gas. The equipment is an ISC-T82 single gas monitor, where T82 data logger is used to transfer data to computer.



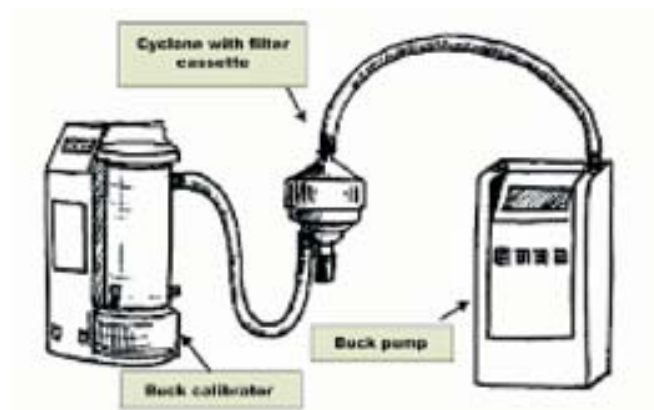
ISC-T82

Monitoring particulate matter

The buck air pump can be used to monitor particulate substances. The sampling equipment uses a pump drawing air past a cyclone which throws off the larger particles and sends the respirable particles through a filter. Filters are dried in an oven and desiccators and weighed before and after monitoring using a 'Five Point' balance. The difference in weight gives the weight of deposited particulates. Details of the equipments are as follows:

- Buck S. S. pump works at a range of 600 to 5000 ml/minute with battery interface to car battery (more modern versions of the buck pump allow real time monitoring where the levels of pollutants each minute are recorded).
- 37 mm plastic cassette, cyclone, filters, PVC pipe, bubble calibrator.

The buck pump is calibrated time to time to ensure that it is drawing the correct volume of air through the filter paper at the correct speed.



Buck Air Pump



Air Pump



Buck Calibrator

Forthcoming Events

- Measuring Change: Indoor Air Pollution and Household Energy Monitoring Asia Regional Workshop. To be organised by Partnership for Clean Indoor Air (PCIA) from 7 to 11 August, 2007, Hanoi, Vietnam.
- Asia Regional Training on Kitchen Improvement. To be organised by Asia Regional Cook stoves Programme (ARECOP) from 12 to 15 August, 2007, Hanoi, Vietnam.
- The Pacific Basin Consortium for Environment and Health Sciences (PBC) to hold its 12th International Conference in Beijing, China from 26 to 29 October, 2007.
<http://pbc.eastwestcenter.org/2007ConferenceHome.html>

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