Letter from the Secretariat

May/June 2006

ASIA REGIONAL COOKSTOVE PROGRAM

ARECOP

Dear Colleagues,

The recently held WHO initiated Inter-Regional Training Workshop on Indoor Air Pollution and Household Energy Monitoring has further emphasized the need for impact evaluation in household energy projects, specifically on health status and indoor air quality. We provide here, an overview of the training/workshop's modules.

In this edition of LfS, we also would like to congratulate Appropriate Rural Technology Institute (India) and Cambodia Fuelwood Saving Project-Groupe Energies Renouvelables en Environment et Solidarite (Cambodia-France) for their household energy projects whcih won the 2006 Ashden Awards. A brief news on the winning projects are featured here.

We are also expecting a number of events in the coming months - Regional Training on Biomass Gasification for Small Scale Thermal Applications, ARECOP Planning Technical Advisory Meetign and ARECOP Country Contact Point Meeting. These upcoming events are also featured briefly.

ARTI's biogas unit in use; see inside for a picture of the digestion unit (Source: www.ashdenawards.org/)

WHO Inter-Regional Training Workshop on Indoor Air Pollution and Household Energy Monitoring | *Colombo, Sri Lanka, 22 – 24 May 2006* |

|Organized in collaboration with the United States Environmental Protection Agency and the Center for Entrepreneurship in International Health and Development as a contribution to the Partnership for Clean Indoor Air|

The training workshop was WHO's effort towards building capacity of stakeholders in Asia region to evaluate the impact of housheold energy projects. Participation came from mostly government institutions in health, environmental and housing sectors from countries in Asia; in addition, a number of representatives from NGO's and INGO's working in household energy also participated.

The training workshop has the following specific objectives:
> To emphasize the importance of evaluation in undertaking household energy projects, and in reporting results to the local community, national policy-makers, donors and the international household energy community;
> To provide participants with an overview of different aspects of evaluation in relation to household energy projects, including process versus outcome evaluation, impacts on pollution levels, health, time activity and environment;
> To train participants in the use of questionnaires and monitoring equipment that will permit them to initiate evaluations of their own household energy intervention projects or programmes;
> To discuss principles of study design, ethical considerations and implications for evaluation and to outline next steps in evaluating ongoing or planned intervention projects or programmes.

The modules covered were: indoor air pollution monitoring, and impact evaluation on health status and on socioeconomic conditions. Drawing resources from Center for Entrepreneurship in International Health and Development at the University of California (CEIHD-UCB - USA), Sri Ramachandra Medical College & Research Institute (SRMC&RI-DU - India) and WHO, the training was delivered through a series of lecture presentation, discussion sessions, practical exercises and workshop on the drafting of action plan. Additionally, several participants also made presentations – stove dissemination projects (Practical Action, Bangladesh; Shell Foundation, India; Ministry of Health, Mongolia stove project), kitchen assessment module (ARECOP) and stove design and performance (Rayat & Bahra Institute of Engineering and Bio-Technology, India).

INDONESIA

ICS Training Nusa Tenggara Timur 8-12 May 2006

| Organized by: Dian Desa and The Indonesian Stove Network |
| Supported by: ARECOP and YASPEM, PLAN-Sikka |

The training was held as part of the series of regional training within the country. Participants came from NGO's and GO institutions. Resource persons were drawn from ARECOP and the Indonesian Stove Network.

COUNTRY CONTACT POINT AND PLANNING TECHNICAL ADVISORY MEETING 2006 | Dhaka, Bangladesh, August 2006 |

The PTA Meeting will be held from 28-30 August 2006. ARECOP invites CCPs' representatives and regional and international partners to the meeting. The meeting has the following objectives:

1. To provide the network with an update on the status and present situation of ARECOP based on the outcome of the previous years at the regional and national level
2. Identification of priority areas for the network including issues needed to be address, training needs, opportunities, etc.
3. Discussion and process to identify type of support required in the network, the resources available within the national network
4. Vision to prepare the phasing out of ARECOP or after ARECOP phase 3

The annual Country Contact Point Meeting will be held, back to back with the Planning Technical Advisory Meeting, from 31 August to 1 September 2006.

ARECOP CCPs from Bangladesh, Cambodia, Indonesia, Nepal, Philippines, Sri Lanka, and Vietnam will meet to share status of the national networks and a yearly plan of action of the network.

The two meetings will be organized by ARECOP Secretariat and hosted by ARECOP Bangladesh CCP, Village Education Resopruce Center.

REGIONAL TRAINING ON BIOMASS GASIFICATION FOR SMALL SCALE THERMAL APPLICATIONS. KUNMING |China, 24-27 July 2006 |

ARECOP in collaboration with Solar Energy Research Institute, Yunnan Normal University China, will be holding a five day training on biomass gasification. Prof. H.S. Mukunda and Dr. C.S. Bhaskar Dixit of Combustion, Gasification and Propulsion Laboratory, Indian Institute of Science are now developing the training module and will be delivering the modules during the training.

The training has drawn applicants from Indonesia, India, Lao, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. Selected applicants will be notified on 3rd July 2006.

Cambodian and Indian household energy projects received Ashden Awards

Appropriate Technology Institute (ARTI), (£30,000) wins the Food Award for, in the words of the judging panel, "its revolutionary application of biogas technology to an urban environment, transforming food waste into clean household cooking fuel".

ARTI has designed an innovative compact biogas system suited to urban households that uses food waste and other sugary, starchy substances rather than dung to produce gas for cooking (View more details here)

ARTI's new compact biogas technology developed by the inspirational Dr. Karve and his team of engineers, needs only vegetable residues, waste food and grain.

The biogas plants are made from cut-down HDPE water tanks. With its moulded plastic construction and 1m3 capacity it takes only 2-3 hours to install, and is cheaper and easier to put in place than the dung based plant. Its relatively small size means it can be used in urban houses and even apartments, which is a break-through in the world of biogas through in the world of biogas production. So far, 700 units have been installed in the state of Maharashtra. The potential for rapid replication is vast. ARTI has also decided not to patent its design, and so allow the rapid dissemination of this innovative and effective technology.

Ashden Award money would be used to help the design reach 500,000 potential users in the state of Maharashtra.

ARTI's Biogas unit (Source: www.ashdenawards.org)

Meanwhile, Cambodia Fuelwood Saving Project-Groupe Energies Renouvelables en Environment et Solidarite (CFSP-GERES) took the second prize (£10,000) in the Enterprise Award. In the words of the judging panel,the program has been "successfully commercialising a new design of cooking stove, which cuts fuel use, so reducing pressure on Cambodia's forests, saves users money, and boosts the local economy".

The prize was awarded for CFSP-GERES' project in Cambodia, which introduced improved charcoal-burning stove which consumes at least a quarter less fuel, is healthier to use, and lasts longer than the traditional ones. The stove is more profitable for its producers and retailers, and also saves the householder both money and fuel. Over 110,000 have now been sold to homes mainly in Phnom Penh and the surrounding region. Ashden Award money would be used to set up a new national stove making centre, to train producers in the whole process 'from clay to kiln'. That will mean lots more stoves come on to the market, so ensuring no shortfall in supply **(Extracted from http://www.ashdenawards.org/)**

WHO Inter-Regional Training Workshop on
Indoor Air Pollution and Household Energy Monitoring
Colombo, Sri Lanka, 22 – 24 May 2006

WORKSHOP BACKGROUND

More than half of the world's population relies on solid fuels, including biomass fuels (wood, charcoal, dung, agricultural residues) and coal, to meet their basic energy needs. Cooking and heating with solid fuels on open fires or traditional stoves results in high levels of indoor air pollution. Globally, indoor air pollution is responsible for approximately 1.6 million deaths every year.

Various interventions are available to reduce indoor air pollution and associated health impacts at the household level. Few reliable studies have been undertaken to assess the effectiveness of these interventions in the field. Current evidence is insufficient for drawing conclusions about which interventions work in a specific setting, and for making recommendations to local and national policy-makers.

Evaluation can help inform:
1. How interventions reduce pollution and personal exposure and what broader impacts interventions have on the household as a whole
2. The sustainability and cultural acceptability of a given intervention.

Documenting these impacts will help generate the evidence to convince policy-makers and donors at all levels that household energy interventions work in reducing one of the major global threats to children's and women's health.

These training workshops were designed to empower governmental and non-governmental organizations as well as research institutions to evaluate the impact of intervention projects or programmes. Participants included representatives of organizations engaged at the technical level in ongoing household energy intervention projects or programmes and those planning to undertake such work in the future.

Module 1 Evaluation basics

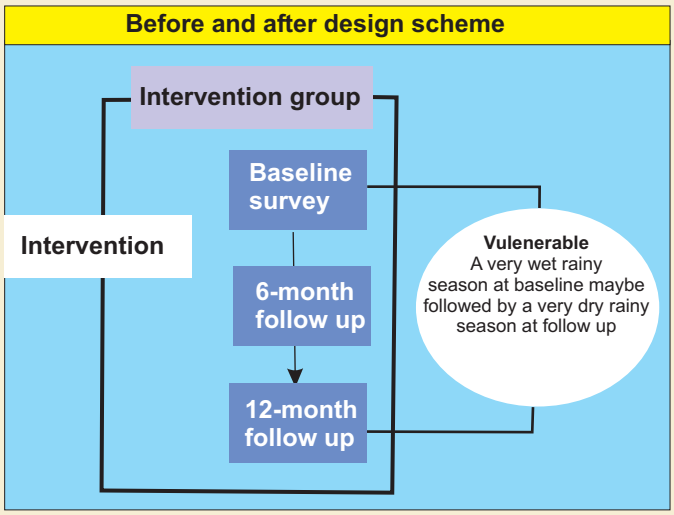
Why evaluate?

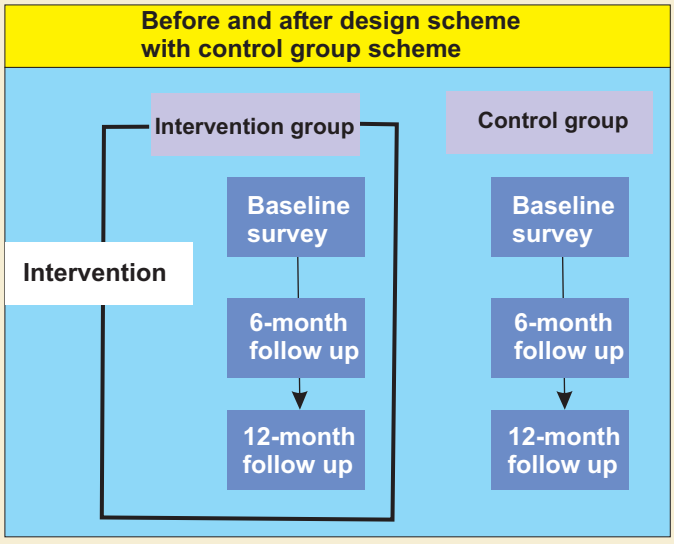
1. Impact evaluation tries to assess whether an intervention has been adopted and implemented in the community and whether it has been effective in achieving its intended impacts.
2. Economic evaluation tries to demonstrate the economic return of investments in an intervention and may be used to compare the cost-effectiveness of one intervention against another.

What to evaluate?
›› Adoption
›› Market development
›› Technology performance
›› Pollution and exposure
›› Health and safety
›› Time and socioeconomic impacts
›› Environmental impacts

How to evaluate?
1. The before and-after design **without** a control group
2. The before and-after design **with** a control group
3. The cross-sectional design

It discusses their advantages and disadvantages, and gives a real-life example of its application as part of an evaluation study in different countries and settings.

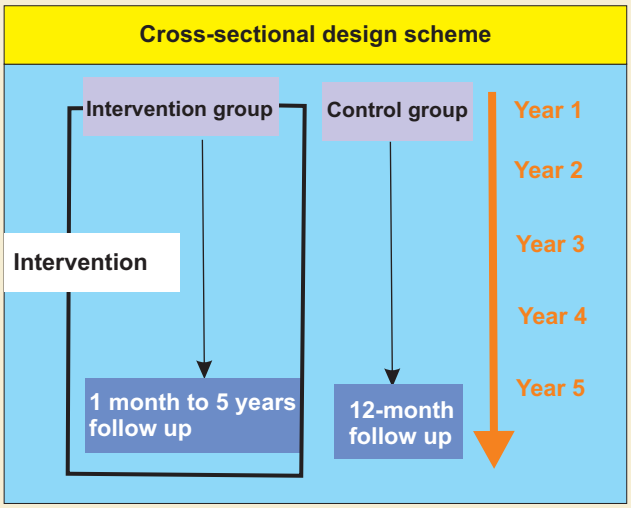




Quantitative and qualitative methods

Quantitative methods (performance testing, indoor air pollution monitoring and questionnaires)

Qualitative methods, (in-depth, open-ended interviews, direct observations of behaviours and participatory methods).



Module 2. Indoor air pollution monitoring

Biomass pollution basics

1.Two pollutants are of primary interest for both health effects and IAP monitoring: particulate matter (PM) and carbon monoxide (CO).
2.Considering available technologies and the relative cost and ease of monitoring, it is recommended that organizations focus on measuring levels of PM 2.5.

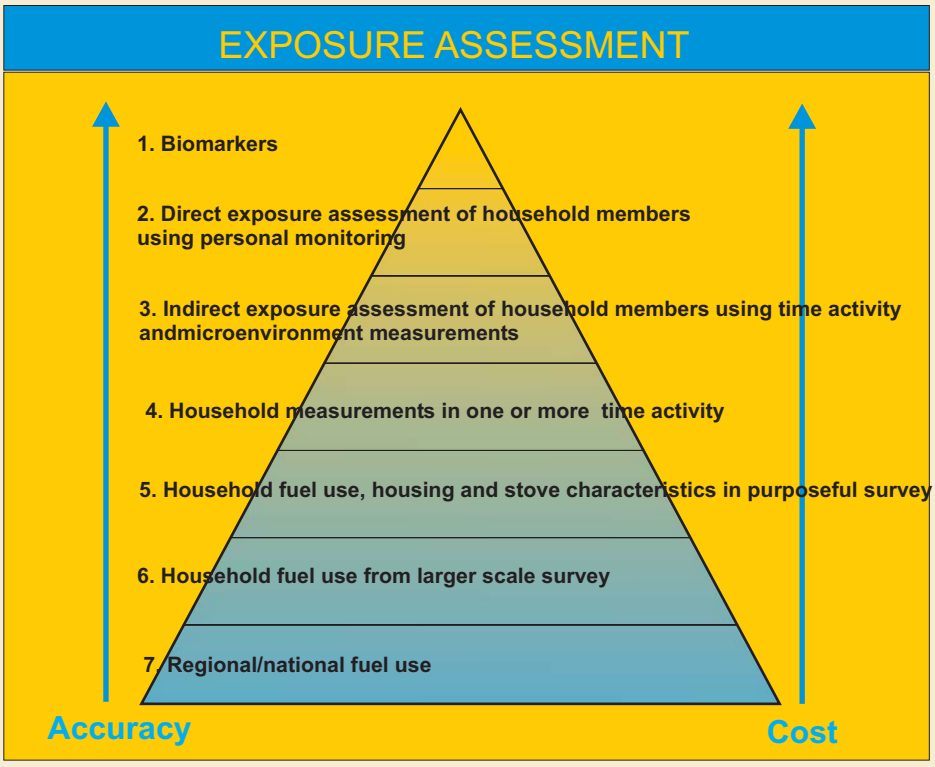
Indoor air pollution measurement options

What characteristics of IAP can be assessed (e.g. indoor concentrations, personal exposure, outdoor or total emissions) and what pollutants can be measured.

CO measurement options
1. bag collection and lab analysis
2. colour-change diffusion tubes and
3. electro-chemical monitors.

PM measurement options include
1.Gravimetric monitors (pump and filter method)
2. light-scattering devices.

IAP monitoring kit compiled by CEIHD and the Shell Foundation: the UCB particle monitor, the HOBO CO logger and CO diffusion tubes.



The exposure assessment pyramid summarizes how increased measurement accuracy tends to be accompanied by increased cost. Measurement duration, seasonality and sampling intervals are important factors in deciding when to measure.

Module 3 Monitoring impacts on health and well being

Background

A review of the evidence for the linkages between indoor air pollution, household energy and health provides the introduction to this module. Acute lower respiratory infections (ALRI) among children under five, chronic obstructive pulmonary disease (COPD) and lung cancer (in relation to coal use) emerge as the health impacts of greatest public health

Assessment of changes in health outcomes

1. "The best-available assessment", a physician-based assessment of pneumonia in children and COPD in women;
2. "The feasible quantitative assessment", a questionnairebased assessment of respiratory disease symptoms; and
3. "The qualitative assessment", which obtains information from interviewees on those symptoms perceived to be associated with indoor air pollution.

Health Impacts of Indoor air pollution

Health outcomes	Evidence	
> ALRI (children<5years) > COPD (Adults) > Lung cancer (coal)	Between 10-20 studies Few measured exposure Confounding problematic	STRONG
> Tuberculosis > Cataract > Upper airway cancer > Asthma	Several consistent studies (more conflicting for asthma)	MODERATE
> Low birth weight > Perinatal mortality > Otitis media	Very few studies, support from environmental tobacco smoke and ambient air pollution studies	WEAK
> Cardiovascular disease	No studies but suggestive	

.Module 4 Monitoring stove performance

Stove performance criteria

Six criteria are important for evaluating stove performance - efficiency, specific consumption, turn down ratio, speed of cooking, user satisfaction and emissions.

Stove performance tests:

Water Boiling Test, the Controlled Cooking Test and the Kitchen Performance Test.

Stove design criteria

Design criteria are important for improving stove performance, and design solutions exist for creating stoves that succeed in improving all six performance criteria. Two design criteria must be met to create a stove that uses less fuel and produces less pollution: improving fuel combustion (combustion efficiency) and directing more of the heat into the pot (heat transfer efficiency).

The module discussed in detail the various factors that affect combustion and heat transfer efficiencies.

Module 5 Monitoring of socio economic impacts

What are socioeconomic impacts?

> Time use: shorter cooking times (for example when moving from a 1-pot to a 2- pot stove) also free up time. Saved time can have secondary benefits: perhaps it will be spent in school, engaged in an income generating activity or invested in childcare.

> Changes in expenditure: In situations where fuel is purchased, fuel savings will result in lower expenditure on fuel. Like time savings, financial savings may have secondary benefits, such as increased expenditure on food and better nutrition.

> Prestige and status: A cleaner house due to less smoke or the prestige of owning a modern stove can result in a perceived rise in the status of users. This can be empowering and may also be an important promotional tool.

> Other impacts - including problems: Users often identify benefits not foreseen by the implementing organization. Examples include improved portability of the cooking device, the ease of keeping it alight or a reduction in pot-blackening soot. Users may also identify drawbacks of an intervention, and it is important to understand these. For example, the removal of smoke from homes has been associated with fear of snakes living in the smoke-free thatched roofs or termites attacking the wooden structure of the house.

Measuring socioeconomic impacts

- Questionnaires and participatory techniques can be used to assess and understand socioeconomic impacts.
- Qualitative questionnaires assess people's perceptions of impact,
- Quantitative questionnaires determine measurable impacts, such as time use or expenditure.