

REGIONAL WORKSHOP ON ICS, KITCHEN IMPROVEMENT AND HEALTH

19 - 22 August 2003, Galle, Sri Lanka

The objectives of the workshop were:

1. To provide a forum to share knowledge, experiences and new strategies surrounding kitchen improvement programs
2. To identify key success/failure factors in existing or past Kitchen Improvement programs.
3. To explore in-depth how ICS and Kitchen Improvement programs can eliminate or reduce health problems associated with the unhealthy kitchen environment.
4. To generate recommendations and a program approach to Kitchen Improvement.

The four-day workshop provided an exchange forum through paper presentations, group discussions and a field trip. Participants came from various Asian countries (Bangladesh, Cambodia, India, Indonesia, Nepal, Philippine, Sri Lanka, Thailand and Vietnam) and from different sectors including NGOs, academia, and government (though mostly were from NGOs which have been working on improved cookstove programs).

WORKSHOP INAUGURATION

The workshop was opened with the lighting of Sri Lankan Traditional

Light, followed by addresses from the host and organizers (Mr. Abayawardhana and Mr R.M. Amaresekera of IDEA and Ms. Christina Aristanti of ARECOP Secretariat) and by the resource person (Dr. R.M. Pandey of MSMT, Nepal). Later, this was followed by an introduction of the workshop objectives and framework by Ms. Aristanti.

WHAT IS AN IMPROVED KITCHEN?

In order that participants grasped the same perspective before embarking on a discussion on kitchen improvement, there was a



The Regional Workshop was jointly organized by ARECOP Secretariat and Integrated Development Association, Sri Lanka.

brainstorming session to define the concept of "kitchen improvement". In this, participants were invited to share opinion on what they perceive as an improved kitchen.



Above: An opening of the workshop
Below: Presentation by the participant

DAY 1

On Day 1, presentations and discussions were on the theme "Indoor Air Pollution, Kitchen & Health". Three presentations were made on the theme, which are:

1. **The stove and kitchen smoke**, C.V. Krishna (CREAT, India)
2. **Effect of kitchen Emissions on the Health of Rural Women**, Prof. S.K. Sharma* and Asif Ali Khan (Energy Research Centre, Panjab University, Chandigarh, India)
3. **Indoor air pollution a possible contributory factor for chronic obstructive lung disease in women of Sri Lanka**, Dr. Anoma Siribaddana (Chest Clinic/Teaching Hospital, Kandy, Sri Lanka)
4. **Indoor air pollution and health**, Prof. Dr. M. R. Pandey (MSMT, Nepal)

During the group discussions on day 1, participants discussed the extent of current intervention in addressing

WHAT IS AN IMPROVED KITCHEN? (A summary of brainstorming result)

1. **Functional aspects:**
 - Sufficient working and storage space
 - Orderly with regards to stove placement, cooking position, utensils, storage, safe placement of sharp instruments, water supply)
 - Ergonomic setting (cooking position, storage of various articles and materials)
 - Protection from rain and wind
 - Sufficient lighting
2. **Health aspects:**
 - Measures to reduce smoke (enough ventilation, improved cookstove)
 - Clean water supply
 - Keep out animal disturbances (e.g. Rat)
 - Good garbage disposal system
 - Hygienic environment (food preparation place, washing place, etc)
3. **Social aspects:**
 - Women and children involvement with regards to kitchen

WHAT HAVE BEEN ADDRESSED BY ICS AND KI PROGRAMS WITH REGARDS TO INDOOR AIR POLLUTION?

(An overview of group discussion results)

1. **Improved Cookstove Program**
The general perspective of the participants indicated that improved cookstove programs have been to a different degree addressed the issue of indoor air pollution. Stoves/chimney stoves have been promoted, demonstrated and installed. There is a degree of quality assurance on improved stoves produced.
It was mentioned that cookstove program in Thailand has been a government program and that there is not enough commercialization (which reflects low level of sustainability). There has also been ICS awareness campaign (e.g. TV and radio in Cambodia) and distribution of information and educational materials (e.g. in Cambodia and Nepal). In ICS related program, cooperation was also sought with government institutions. Specifically mentioned in Cambodian case, cooperation has been conducted with ministers related to energy, research, health and women.
2. **Kitchen Improvement Program/Activities**
Several countries have also implemented kitchen improvement program (Indonesia, Nepal, Sri Lanka). For example in Indonesia through pilot projects (with ICS, introduction of cement floor, improved ventilation, etc) and using knock down kitchen model.
While some other measures have been taken, including, the introduction of ventilation, although in an ad-hoc/scattered manner. It was also mentioned that indoor air pollution has been addressed in the school curriculum. There have been also exposures made on the issue of indoor air pollution through media write ups

WHAT ARE THE GAPS IN THE PROGRAM AND ACTIVITIES? (An overview of group discussion results)

1. **Policy**
Generally it was agreed upon that in the countries represented by participants, present policies related to indoor air pollution, ICS and

Kitchen Improvement have been inadequate, e.g.

- policy has not recognized cooking with biomass using inappropriate device as health hazards
- the issue of indoor air pollution has also not been addressed in housing, health, and energy agendas.
- With regards to policy, it is especially mentioned that in Nepal, the National Plan, while has recognized ICS as fuel saving device, yet has not recognized it as a health improvement device.

2 Program/User

With regards to the present programs, there are expressions about inadequacy of training, awareness and information and education materials. While public awareness about IAP has also not been adequate. Further it was pointed out that thus far, program have put more focus on fuel efficient stove and paying less attention to smoke. There was also no existing kitchen improvement program in Thailand, Sri Lanka, Bangladesh. In relation to user, it was

mentioned that program face financial obstacle.

3. Donor

Lack of attention given by donor agencies on the above issues.

4. Research and Development

There was also an expression about the lack of Research & Development on stove emission factors, health impacts, IAP/health risk. Further, it was also mentioned that R&D should also focus in improving indoor air quality and not only ICS

kitchen indoor air pollution and identified gaps and potential ways of addressing the problems.



A group discussion session

DAY 2

Theme for Day 2 of the workshop was "Experiences in Kitchen Improvement". The presentations were on the experiences of kitchen improvement activities in Indonesia, Nepal and Sri Lanka. The presentations were as follows:

1. Brief Presentation of the Kitchen Improvement Programme in the Weeraketiya District Secretary

IMPACTS /ACHIEVEMENTS

(An overview of discussion results)

There has been a micro level impact in those places where kitchen improvement activities have been implemented (Sri Lanka, Indonesia, Nepal). Among these impacts are: smoke reduction, health improvement, mental health improvement and increased economic productivity.

WEAKNESSES

(An overview of discussion results)

1. Little awareness of the program and activities
2. Financial support has also been lacking/Lack of support from the government for such activities
3. KIP has been treated as a welfare service rather than a commercial one.
4. Lack of integration of kitchen improvement activities (they are being isolated project)
5. Lack of information and educational materials on kitchen improvement
6. General lack of capability and skills to carry out kitchen improvement activities
7. KIP is now only at an inception stage
8. Reluctance of target user to change practices
9. Socially kitchen has also not been considered as an important part of the house - thus little attention is paid toward improving it.

STRENGTH

(An overview of discussion results)

1. Health hazards of IAP accepted globally
2. There are organizations involved in KI and related fields
3. Research on smoke and health hazards have been conducted
4. There is a growing awareness
5. Limited research finding and data is available
6. Audio/visual aids publications are available
7. Program :
 - Proven micro-level implementation
 - Strong local participation
 - Women and children have been encouraged to participate in KI activities
 - Holistic approach to kitchen improvement has been used
 - Multi-sectoral involvement
 - Strong network through national and regional network

Division- Sri Lanka (implemented by IDEA with the participation of Ruhunu Ladies Development Society), Mr. R.M Amarasekera (Integrated Development Association, Sri Lanka)

2. Urgency for Holistic Approach in Kitchen Improvement Program, Hari Bhkta Khoju Shrestha (RUCODES, Nepal)
3. Kitchen Improvement Program in Kokap, Kulon Progo, Yogya-karta, Indonesia, Prianti Utami (Yayasan Dian Desa/Indonesian Stove Network)

Other presentations were made on traditional kitchens in Cambodia, by Mr. San You of Development of Alternative Technology, Cambodia, and on stove program implementation by Mr. Aminul Islam, of Village Education Resource Center, Bangladesh.

Another group discussion session followed, in which participants reflected on the experiences of kitchen improvement activities presented earlier: what have been the impacts; what have been the strengths; what have been the weaknesses; what could be the solutions.

Another discussion session follows, in which participants, grouped based on countries worked on:

1. Identifying greatest concerns in typical kitchens in their respective countries
2. Identifying specific social cultural factors if Kitchen Improvement Program (KIP) were to be implemented in their respective countries
3. Identifying potential obstacles if KIP were to be implemented in their countries

Participants were asked to complete the presentation and displayed the results of the working group on day 4. At the end of day 2, another presentation was made by Prof. S.K Sharma on his studies investigating indoor air pollution dynamics in a kitchen.

DAY 3

The whole of day 3 was spent on a field trip to a Kitchen Improvement Program implemented at Weeraketiya, by Integrated Development Association and Ruhuna Rural Ladies Association. Participants were then divided into 3 groups and visited several houses where kitchen improvement had been implemented. Participants observed and interacted



Participants were welcomed at Ruhuna Rural Lady Association



Chimney hood (wood and mud) installation and introduction of racks, as part of household kitchen

SUGGESTED SOLUTIONS

1. Create awareness/ awareness promotion on kitchen smoke health hazards (seminar, workshop)
2. Education/inclusion in school curricula
3. Information and Education materials
4. Simple local language IEC on operations and maintenance

PROGRAM APPROACH/ DISSEMINATION APPROACH

1. Integrated mechanism
2. Capacity building and mobilization on kitchen improvement activities
3. Demonstrations
4. Subsidy for KIP initiative
5. Commercialization
6. Forge multilateral relationship
7. User to user campaign
8. Appropriate/affordable technology

DONOR SUPPORT POLICY/ADVOCACY

1. Inclusion in policy document
2. Lobby
3. Highlight health hazards of IAP for advocacy
4. Formation of pressure groups (local, national)
5. National coordinating body (regional, international network)

with householders.

DAY 4

Day 4 was started with a discussion on the field visit to Kitchen Improvement at Weeraketiya . Participant reflected and wrote down their impressions on the field visit. This was followed by a

gallery presentation on the results of group work on day 2. Participants examined the presentations and exchanged ideas.

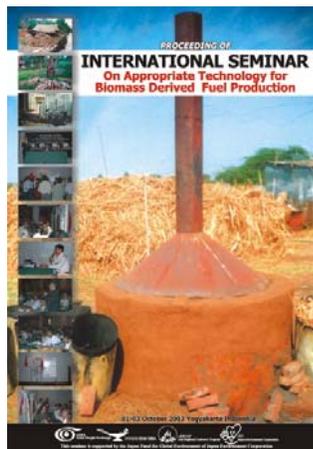
Another group discussion on Guidelines for Kitchen Improvement implementation was conducted, followed by conclusions and

recommendations of the workshop. The workshop was closed with remarks by Mr.R.M. Amarasekera, Mr. Marikar (IDEA) and Christina Aristanti (ARECOP). *glow*

<p>COMMENTS ON FIELD VISIT (A Summary)</p>	<p>GUIDELINES FOR IMPLEMENTATION OF KITCHEN IMPROVEMENT PROGRAM (An overview of group discussion results)</p>	<p>CONCLUSIONS (An overview of group discussion results)</p>
<p>The visit resulted in various comments from participants. Some commented that the program has been good, inspiring and should be supported:</p> <ol style="list-style-type: none"> 1 Good program and implementation: <ul style="list-style-type: none"> - Community participation - Physical implementation were good : using hood is a leap forward to tackle smoke problems replacing chimney and its problems; ventilation; storage and waste disposal; healthy and safe kitchen, use local resources/low cost 2. Good eye opener for a KIP 3. Should be disseminated and promoted to other places 4. Impacts on users : Users' wishes of retention of smoke psychologically satisfied and that and the implementation make people happy 5. Credit scheme initiated by IDEA on the kitchen improvement has been helpful <p>Further there were also suggestions with regards to the following:</p> <ol style="list-style-type: none"> 1. Improvement of natural lighting to alleviate darkness 2. While addressing still poorer houses, and smaller kitchens, we have to take cautious care in choice of ICS and the kitchen improvement steps on site/in situ 3. The layout of the furniture should be stressed even if it is in small kitchen 4. Permanent board should be displayed at the entrance of the 	<p>village mentioning KIP details to create awareness to other villagers and outsiders</p> <p>General approach and principles :</p> <ol style="list-style-type: none"> 1. Integrated/holistic approach 2. Provide choice on the concepts of building new, improving existing OR to modifying internal components of kitchens 3. Standardize components and solutions 4. Simple manual on how to do and what to think about 5. Optimal use of illustrations and pictures <p>General contents</p> <ol style="list-style-type: none"> 1. Kitchen survey /Study on existing kitchen 2. Architectural and construction aspects <ul style="list-style-type: none"> - kitchen measuring - location - Plan 3. Kitchen components <ul style="list-style-type: none"> - ICS - water supply - washing place - etc 4. Social and cultural practices 5. Implementing KI program /activities <ul style="list-style-type: none"> - Integrate KIP to ICP or other programs e.g. Sanitation - Institutionalization of KIP - Information, Education and communication 	<p>The extent of indoor air pollution:</p> <ul style="list-style-type: none"> - Indoor air pollution is a health hazard, which needs immediate attention. - Research results show an alarming scenario on IAP in the kitchen <p>Gaps:</p> <ol style="list-style-type: none"> 1.Lack of awareness among stakeholders 2.Lack of appropriate technical intervention, Information, Education and Communication (IEC) and policies 3. There is little investment by the government and funding agencies 4. Efforts to address the issue on IAP have just started and awfully inadequate 5. Insufficient institutional linkages 6. Insufficient facilities for R&D <p>Impacts of kitchen improvement:</p> <ol style="list-style-type: none"> 1. Saves energy and cooking time <p>Lessons learnt from experience:</p> <ol style="list-style-type: none"> 1. Beneficiaries' participation can lead to a successful result 2. It is important to share information, experiences and knowledge from each other <p>RECOMMENDATIONS (An overview of group discussion results)</p> <p>On popularization of Kitchen Improvement:</p> <ol style="list-style-type: none"> 1. Kitchen Improvement Program (KIP) should be

<p>integrated with other programs</p> <ol style="list-style-type: none"> Increase mass awareness on risks and benefits of KIP to attract interest of all stakeholders Promotion of info, education, communication with regards to improved kitchen Information exchange (Data on IAP; success stories of KIP pilot projects; International experience sharing) <p>On implementation initiatives and efforts</p> <ol style="list-style-type: none"> Development of guidelines and or manual <ul style="list-style-type: none"> guidelines and manuals on KIP implementation; Technical manual; modular design to meet diverse needs of target group in different countries Kitchen improvement should 	<p>emphasize on the use of low cost and local materials</p> <ol style="list-style-type: none"> Capacity building <ul style="list-style-type: none"> Continuation of trainings /workshops Training program on monitoring IAQ should be organized for member countries On national level initiatives and efforts <ul style="list-style-type: none"> Formation of national focal point for institutionalization of KIP, coordinate activities of different members and agencies Formation of working group in each member country coordinated by ARECOP Country working group should create awareness, media, seminar and workshops Each working group should prepare country specific concept paper for kitchen improvement implemen- 	<p>tation</p> <p>On Research and Development and studies</p> <ol style="list-style-type: none"> Rigorous R&D (quantitative and qualitative) should be initiated in the area of IAQ and improved kitchen design. Baseline studies IAQ and kitchen planning should be undertaken in different agro-climatic region having different socio-cultural <p>On Policy and related issues</p> <ol style="list-style-type: none"> Lobby / advocacy with government and donors Government and donors must take this issue as a priority in policies Donor agencies should be approached in undertaking pilot studies in each country
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PROCEEDING OF INTERNATIONAL SEMINAR ON APPROPRIATE TECHNOLOGY FOR BIOMASS DERIVED FUEL PRODUCTION



Available on Request at the
ARECOP Secretariat
 Jl. Kaliurang Km. 7, GG. Jurug
 Sari IV/19, Yogyakarta,
 Indonesia, Phone: 62-274-
 885247, Fax: 62-274-885423,
 PO BOX 19, YKBS, Bulaksumur,
 Yogyakarta 55281, Indonesia
www.arecop.org
secretariat@arecop.org

Part 1

The first part of the seminar was overview on biomass energy and its potential in Asia and in Indonesia which is intended to give the participants a good understanding of the biomass energy situation and also its potential for development and utilization both in the Asia region and especially in Indonesia.

Part 2

The second part of the seminar was paper presentations on the topic of the production of biomass liquid fuel. In this part there were 3 papers presented.

- **Biofuel for Diesel Engine from Esterified Palm Oil Distillate**- Dr. Ir. Supranto M. Sc.
- **Biodiesel from Vegetable Oil: Its Impacts on Technology, Environment and Economy**- Prof. Dr. Tatang Hernas Soerawidjaja
- **High-Calorie Gasification from Biomass, and the Transition to Gas Fuel, Liquid Fuel and Power Generation**- Prof. Masayasu Sakai, Dr. Eng.

Part 3

In part 3, the paper presentations and discussion was on the production of cleaner fuel from biomass focusing on various gasification technologies. There were 6 papers presented by

resource persons from Indonesia, India, Japan and Thailand. In addition, there was one demonstration on the technology developed by the Japan expert on the Fluidized Bed Biomass Gasification Technology.

- **Bio-fuel from Cellulosic Materials: Gasification and Pyrolytic liquefaction**- Prof. Dr. Robert Manurung
- **Biomass Gasification Technology A Summary on the Experience, Development Fabrication and Application**- Ir. Chayun Budiono M.Sc
- **Clean Biomass Based Energy Technologies**- Prof. H.S. Mukunda
- **Biomass Gasification - Diesel Engine Combined Cycle (bioner) as Rural Electricity Supply**- Ir. Safriadi, Ir. Bambang Suwondo Rahardjo, Ir. I Putu Sutrisna
- **Prospect of Fluidized Bed Biomass Gasification Technology**- Prof. Masayuki Horio & Reiji Noda

Part 4

The last part of the seminar presented and discussed thoroughly on technologies on upgraded solid biomass and its technologies such as charcoal making and briquetting from light agro waste. In this part, a small gasification technology was also presented.

- **Charcoal as an Alternative Fuel**- Donatus Rantan & Rudyanta Utama
- **The Blue Flame Revolution**- Dr.A.D.Karve
- **Charcoal From Light Agro Waste**- Dr.A.D.Karve
- **Development of Carbonization Technology for Community-Based Char-briquetting Industry**- Ir. Bambang Suchayo, M. Eng. *RIOT*