

Strengthening NGOs and CBOs working with traditional household energy issues

by Auke Koopmans P.O. Box 167, San Pa Koi PO, Chiangmai 50000, Thailand Email: koopmans@loxinfo.co.th

Introduction

Worldwide some two billion people have no access to electricity, and the same, or maybe even a larger number of people, rely on traditional fuels such as firewood, charcoal, agro-residues, and dung for cooking and heating.

Hundreds of millions of women and children, particularly in rural areas, will keep spending several hours a day collecting and transporting firewood for food preparation, in many cases using poorly operating stoves in kitchens that often have very little means of ventilation. As a result air pollution levels in kitchens, which often also serve as a social gathering place for the family, are high. Acute respiratory infections (ARI), eye infections, low birth weight, etc. as well as more chronic diseases like chronic obstructive lung diseases (COLD), are diseases which appear to be much more common in women and children who spend long times in these polluted surroundings. In addition there is also increased evidence that smoke exposure may increase the risk of developing tuberculosis and other diseases.

Methods for reducing indoor air pollution

There are many ways in which indoor air pollution levels can be reduced or eliminated. One solution, which springs immediately to mind, besides the introduction of fuels which are less polluting, is improving ventilation in the kitchen. However, in practice, this may not always be possible due to concerns of security (theft), the type of building materials used to construct the kitchen or the materials and skills available with which chimneys or chimney hoods can be made. There are other solutions, like ensuring that firewood is dry, or extinguishing cooking fires as soon as possible, etc. Another solution is the introduction of improved stoves for cooking and/or heating.

Renforcement des ONG et Organisations communautaires impliquées dans les énergies traditionnelles

Quelque 2 milliards de la population du globe n'a pas accès à l'électricité et dépend la biomasse pour les besoins de cuisson et de chauffage. Les changements sont relativement lents ce qui tend à affecter la santé de ces populations. Des interventions telles que les foyers améliorés, la ventilation et les cheminées sont généralement en mesure d'atténuer les émissions de fumée. ARECOP et RWEDP ont abordé ce problème grâce à une information approfondie et des interventions de terrain de manière à ce que les praticiens locaux soient en mesure d'évaluer, selon le contexte, les modèles de foyers proposés ainsi que d'autres solutions. Les résultats semblent prometteurs.

Learning the lessons in stove dissemination

However, the past has also taught us that introducing improved stoves is not as easy as it sounds. Why is this so? First of all, it should be very clear from the outset of the programme why these stoves are to be disseminated. Is the stove really an improved one, not only in the opinion of those who are committed to stove programmes, but particularly for the user. There are an enormous variety of factors that determine cooking practices. The improved stove must match with all or at least with most of these factors, as it is not likely that people will easily change their prevailing cooking habits. In most cases the users are women, and we can only find out about their needs and constraints by consulting with them on the basis of mutual trust and respect.

Balancing positive and negative effects

At the same time, experience has shown that improvements in one area may make things worse in another area. Introducing chimneys will reduce indoor air pollution levels but in many cases will result in increased firewood use. A popular method to reduce fuel consumption of traditional cookstoves is simply to reduce the airflow by enclosing the fire. This increases the heat transfer efficiency to the pot, but at the same time may lower the combustion efficiency and increase emis-

sion levels, resulting in adverse impacts on health and environment.

Over time, initiatives to introduce improved stoves have shifted from more centralized undertakings by government organizations, INGO's, etc. to a much more 'bottom-up approach' – something which CBOs and NGOs, with their roots in the communities, are much better geared to address.

Addressing the skills shortage

Practice has also shown that, at least in Asia, one of the primary obstacles faced by CBOs and NGOs who want to be active in the promotion of improved stoves is the concentration of technical and programmatic skills among a few experts in improved cookstove research and design.

In recognition of this, the Asia Regional Cookstove Program (ARECOP) and the Regional Wood Energy Development Programme (RWEDP) addressed the issue by developing comprehensive training materials and implementing national training activities, particularly for staff from NGOs and CBOs. The goal of the training activity is to increase the acceptability of improved stoves within these countries by transferring the necessary skills so that the staff will be able to:

- evaluate stove design based on combustion and heat transfer concepts, knowledge of raw materials and technical stove parts
- determine appropriate modifications/improved stove

designs based on the needs, wants and conditions of the target group, in addition to technical knowledge

- become familiar with construction techniques for a selection of different stove designs
- determine an appropriate dissemination strategy based on existing technology dissemination channels
- incorporate gender analysis into stove design selection and introduction
- monitor the progress of a stove programme and trouble shoot where necessary.

The participative and intensive training programme – normally spanning a 2 week period – does this by using local case studies, guiding participants through a step-by-step process to come up with either an appropriate existing stove model or by modifying improved stove designs. A project workplan for their organization, etc. is formulated, based on new skills and knowledge gained during the training period, as shown in Figure 1.

The diagram in figure 1 reflects the training cycle. The oval shape shows that the process of stove introduction is an iterative process, with changes taking place over time when people re-assess what resources are available in terms of materials, skills, etc. As the training takes a long time, the practical work (mud stove and brick stove construction) are interspersed with other activities to make the course more interactive. Mud and brick were chosen as stove construction materials for their ease of use, as the trainees often have little practical stove construction experience. This does not imply that these are the preferred materials.

Evaluating the training programme

In order to evaluate the training materials, and to get answers to specific questions like ‘Would trainers be able to take the training materials and run the training course on their own without external expert support?’, a trial training programme was organized in Indonesia. Although, overall, the trial was successful, with participants integrating technical and social factors into the two stove designs provided by

the participants, two things became clear:

1. A longer and more thorough training should be held for the potential trainers. This would have a longer lead time before the actual training and emphasize participative training methods – if possible integrated with planned national training activities.
2. Where possible, training programmes should be held in the local language, with trainers preferably responsible for the translation of the module into the national language.

Subsequently a Training of Trainers workshop was organized for key persons from NGOs and CBOs. These individuals would potentially be able to act as trainers in those countries where national workshops would be organized. By acting in this way, it was expected that those local trainers would:

- be clear on where and how the module fulfilled each of the objective of the training/workshop
- understand why the particular stove selection process is used, and understand how the training progresses towards the identification of an appropriate stove design and workplan
- be familiar with the technical and social components of the training module

- understand adult learning styles, and the reason behind using participative training methods
- have the opportunity to practice the participative training methods employed, and receive feedback for improvement
- Become a more unified training team, clear on their individual roles and responsibilities.

Impact of training schemes

During the last few years several national training activities have been held in Asian countries. In several countries, stove activities have received a boost as the number of skilled ‘stove-practitioners’ (particularly at local level), has been enlarged. Training materials are available in local languages, and there has been a renewed interest in stoves and a better understanding of what can be expected from improved stove programmes. It has also become more clear that linking improved stove programmes with other programmes like those related to health, sanitation, promoting the small scale industrial sector, etc. may offer better success rates than ‘stand-alone’ stove programmes.

Auke Koopmans was Chief Technical Advisor of the (recently terminated) Regional Wood Energy Development Programme (RWEDP). He has a long-standing interest in all aspects of biomass energy, with a particular interest in household energy issues.

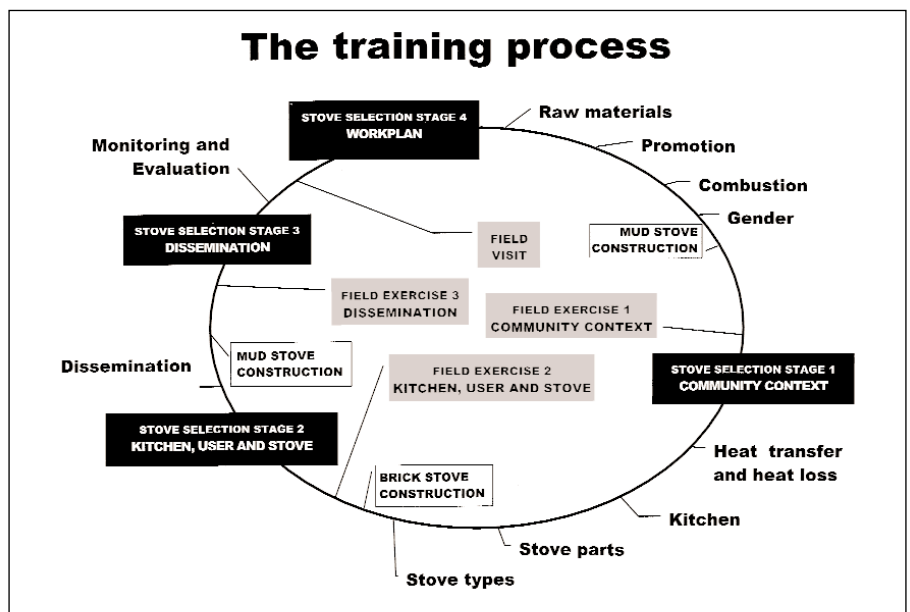


Figure 1 The training process