A PUBLICATION OF THE ASIA REGIONAL COOKSTOVE PROGRAM

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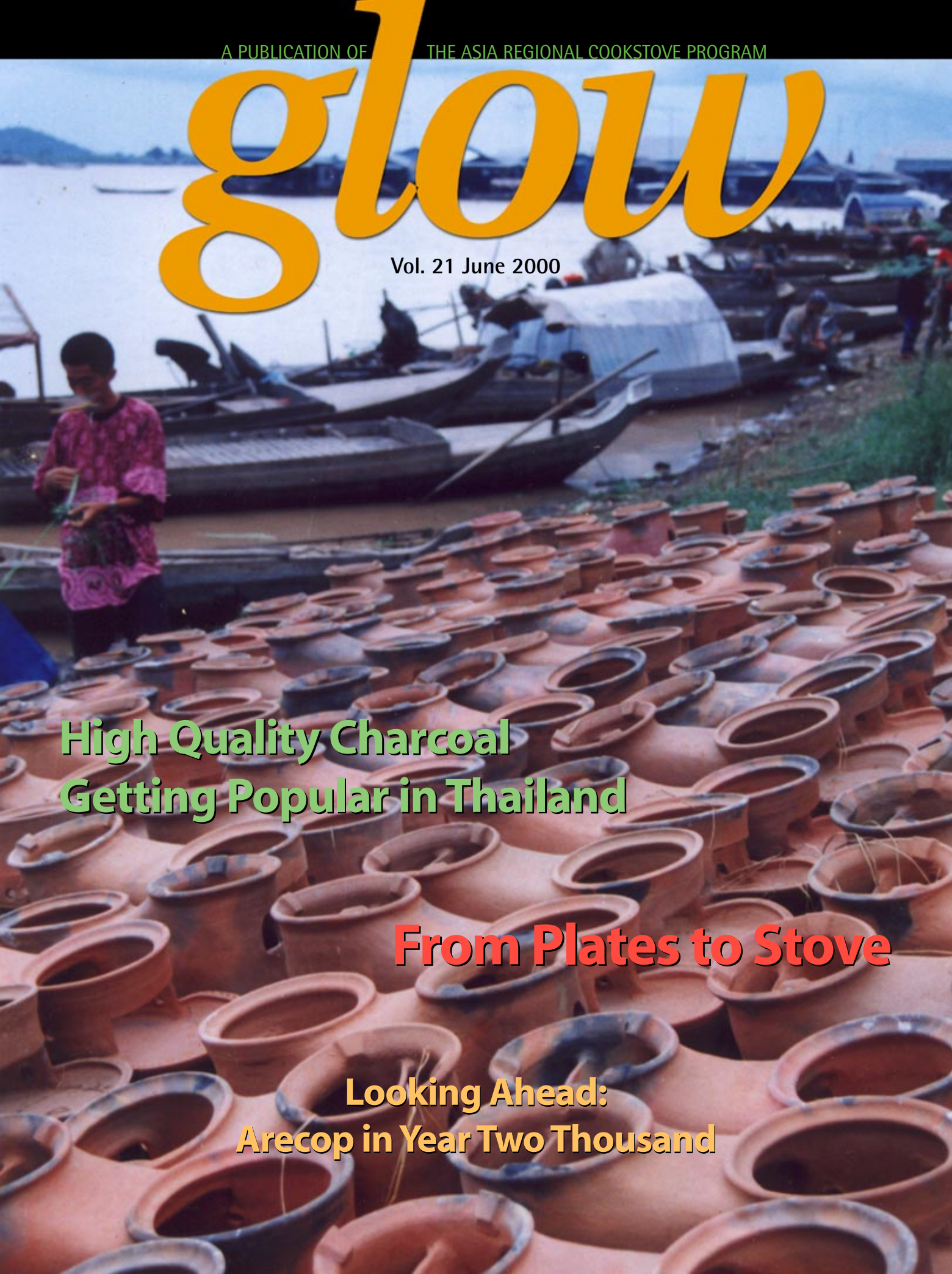

High Quality Charcoal Getting Popular in Thailand

From Plates to Stove

Looking Ahead: Arecop in Year Two Thousand

DEAR READERS

A Start for The Next Three Years

Warm Greetings from ARECOP secretariat from Yogyakarta, Indonesia! GLOW is on the circulation again after being absent in the past three years. Thus, we also make GLOW with a new look. This is the first GLOW of ARECOP phase II and is being able to be published after the Secretariat is back in full swing.

As ARECOP is starting a new phase, you may wonder what the ARECOP secretariat is planning to do in the next three years. Would the activities planned be in accordance to the region needs and development? To give the network members an overview of ARECOP plan of activities in the phase II, December 1999 – December 2002, as an opening article, we present a summary of ARECOP phase II plan of activities. These will from time to time be adapted to the development and the Secretariat welcome comments and suggestions either through communication or through those who will represent the network in the PTA meeting.

From the Secretariat, through our GLOW publication we are happy to share part of our achievements despite of our difficult three years. So in one of the article in this volume you will find a summary of a series of training on Improved Stove Technical and Programatic Skill Training that had been conducted in five of ARECOP member countries, namely Indonesia, Cambodia, Bangladesh, Nepal, and Vietnam. The national trainings were preceded by a Training of Trainers also conducted jointly by ARECOP and RWEDP.

Next articles are features from Thailand and Laos mainly featuring the success of a training program and the utilization of the skill gained through the training for its application and use in the community. One is the result of training on High Quality Charcoal and the other is on Thai Bucket Stoves.

What is special and unique about this particular GLOW publication is the fact that all the articles were written by the ARECOP staff members. This is also due to the fact that the Secretariat just reactivated the network and that the secretariat who is also the editor of GLOW has not got any chances to compile articles from the network members.

What is also different from our previous GLOW is in this volume there is no technical part, as we put in the phase II plan of activities. Please keep in mind that we would welcome articles on technical information (step by step) on ICS or biomass upgrading issues.

With this, we, the editor would like to encourage our members and readers of GLOW to contribute articles that we can share through our publications. The editor has a modest remuneration to those whose articles are published in GLOW that is US$ 50.

GLOW is not owned by the ARECOP secretariat, it is meant as a means for sharing of information and communication among the network members. So, please utilize GLOW to build our network through sharing and communication.

Lastly, there will be a readers column beginning in the next edition of Glow. We therefore invite you to use it as a forum for exchanging and communicating ideas and information on improved cookstove, improved cookstove progra, for making queries and giving feedback.

Happy reading and keep in touch.

THE EDITOR

glow

PUBLISHER
Asia Regional Cookstove Program (ARECOP)
http://www.arecop.org/

EDITORIAL STAFF
Christina Aristanti, Aryanto Sudjarwo
Erwan Kow, Edwin Sudjarwo

OFFICE
Jl. Kaliurang Km. 7
Gang Jurugsari IV/19
P.O. Box 19 YKBS
Yogyakarta 55281 Indonesia

ART & PRODUCTION
Gaia Solutions - Yogyakarta

EMAIL
arecop@yogya.wasantara.net.id

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ARECOP

ARECOP (Asia Regional Cookstove Program)

The Asia Regional Cookstove Program is a forum for voicing the concerns of improved cookstove programs in the Asia Region. It influences and facilitates affective and efficient programs in improved cookstove issues.

A Glimpse of Arecop's Phase II

ARECOP's phase II program which was originally planned for the 1996-2000 period managed to realize some of its works despite meager resources. After four years of delay, the phase II has finaly been granted a three year funding and is now able to run at a full pace. Here we bring you a summary of what we aspire to achieve and also our activities during the phase II.These however are still plans that should be adapted to the regional needs and development and therefore will be further discussed with some ARECOP's members during the forthcoming Planning Technical Advisory meeting.

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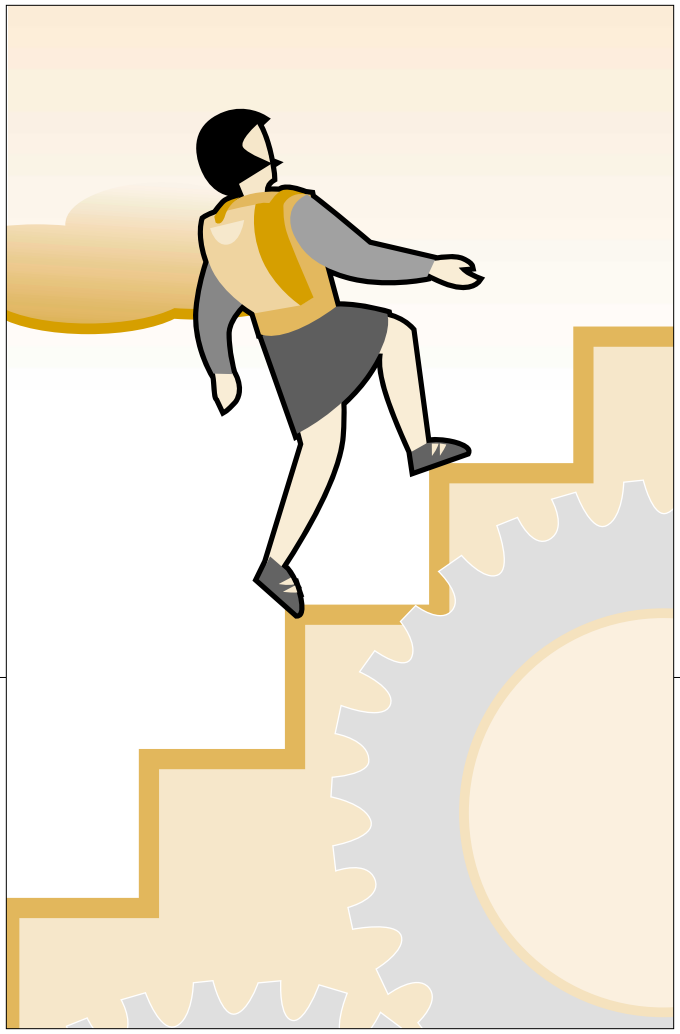


WITHIN THE SCHEDULED time frame of three years (December 1999 - December 2002) ARECOP sets to achieve several objectives, which are:

- To facilitate the development of a strong and active regional network;
- To facilitate skills and capacity bulding in improved cookstove programs;
- To promote biomass fuel resources and improved cookstove as an integral component of sustainable development and to stimulate the integration of improved cookstove technology into the agendas of organizations in other sectors with complementary objectives;
- To heighten the recognition and support for biomass energy issues and improved cookstove technology, nationally, regionally and internationally;
- To promote and facilitate cooperations between GOs and NGOs and other institutions concerned with cookstove technology; and

Besides providing access to information... the network actively perform follow ups and ensure continuity in addressing pertinent issues ...

- To develop capable and independent national programs in improved use of biomass energy.

Activities in the phase II program are grouped into three main categories, which are: *Pro active networking*, *National level initiatives* and *Regional level initiatives*. The activities within the three categories will be interlinked i.e. the activities will be implemented in an integrated and mutually supporting framework. In brief the activities could be summarized in the following paragraphs.

Pro active networking

Networking activities serve as the basis for ARECOP's program and is a crucial aspect in maintaning an active network. Besides providing and facilitating access to information, skills and opportunities necessary to address issues in Improved Cook Stove (ICS), the network actively perform follow ups and ensures continuity in addressing pertinent issues, hence the term 'pro active'. The networking features several activities as described below:

- ARECOP regularly publishes the montlhy 'Letter from the Secretariat', the quarterly *Glow*, the biannualy dossier of recommended publications and occasional other types of publication (e.g. manual, case studies).
- ARECOP information center: This includes maintaining an information database on ICS technology and program, basic information on ARECOP member countries, reference materials, roster of expert and monitoring and evaluation on ARECOP's programs.
- Through exchange of experts and training and workshop supports, ARECOP will make avail-

able supports for skills and capacity building in Improved Cookstove Programs (ICPs).

• Likewise, ARECOP also provides support for initiatives in ICS and related issues - through assistance in developing sound proposals, training and/or workshop frameworks, program plans and strategies. Additionally this also includes assistance in approaching potential partners and donor agencies and facilitating access to information and expert inputs from within the region and financial supports for selected programs.

• ARECOP aims to stimulate the recognition and understanding of ICS at an international level, especially on the benefits derived from integrating development of ICS and other related sectors. This is realised through bridge building for popular and integrative approaches by developing relationships with international agencies and NGOs and by active participation in meetings and events of regional and international organisations and networks whose scope of work is related to ICS.

ARECOP also provides support for initiatives in ICS and related issues – through assistance in developing sound proposals, training, program plans and strattegies.

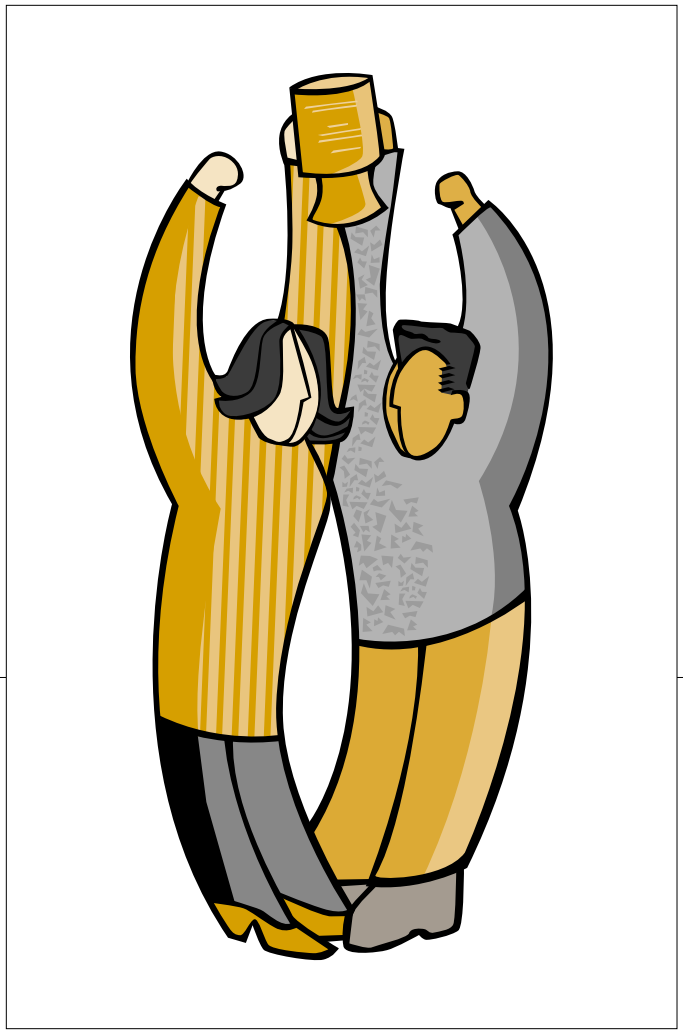
• Network coordination between ARECOP secretariat and network members through regular letter communication and country visits. ARECOP will also encourage information exchanges among network members, especially among Country Contact Points (CCPs). Planning –Technical Advisory meeting will also serve as a forum for information and idea exchanges, strengthtening personal ties among network members and exploring possible cooperations.

National level initiatives

The building of national level networks is a means to overcome major obstacles in terms of the lack of access to information on effective development and application of ICS models. Cooperations among organisations at the national level would enable the sharing of experiences, resources, trainings, workshops and expertise resulting in the overall effectiveness of country wide ICPs. Specifically these activities will be undertaken:

• Technical assistance for strenghtening National Level networks. This was facilitated through the establishment of a CCP in every networked country. A CCP will then coordinate the sharing and exchanges of human, material and financial resources at national level. To realise this, ARECOP will facilitate communication and co-operations among ICPs as well as other relevant organisations and other sectors.

• Coordinating and facilitating : researches pertinent to ICPs development; workshops and trainings to heighten and spread skills



among ICPs; monitoring and evaluation activities on the progress of national network and on ICP impacts on stove users.

• Facilitation of ICP development through encouraging and assisting organisations in developing sound program plan, providing access to information and opportunities to participate in regional activities and training, stimulating active support and active participation of international agencies locally.

Regional development initiatives

Program development which aims to enhance program effectiveness and its long term sustainability. ARECOP intends to disseminate information on the advantages and disadvantages of specific dissemination strategies and provide guidelines , or introducing, an alternative dissemination strategy. This will be done through :

• Publication of case studies on dissemination methods. These case studies will be analysed to determine the effectiveness of programs. Based on findings from the case studies' analysis, guidelines for implementation of effective dissemination methods will be produced.

• Skills building for effective and self reliant programs. ARECOP will conduct monitoring and evaluation workshop aims to disseminate monitoring and evaluation skills. In turn, a long term aim will be to improve skills in stove design selection, in conducting needs assesment exercise and engaging in effective program planning.

• National level trainings for diffusion of technical skills. A method of skills difussion is through training modules development and then conducting trainings. Other dissemination means is planned using multi media training materials (film clips and animation) and films, with inputs from RWEDP and regional experts. Five national trainings have been conducted so far (see articles on "National Training on Improved Stove and Dissemination" in this issue of Glow). Two more trainings are planned in the near future.

ARECOP will also aim to raise gender awareness and compile and disseminate information on indigenous knowledge ...

• ARECOP will also aim to raise gender awareness in ICP, which has been a neglected subject. Case studies, workshop and guidelines will then be produced on the subject.

• During phase II ARECOP also aims to compile and disseminate information on indigenous knowledge in ICS through the publication of case studies. Some of the important points on indigenous knowledge will also be incorporated in some programs where approriate.

• Asia Regional Program for Kitchen Improvement. A training and workshop on kitchen improvement for rural and semi urban Asian households has been conducted in Dhulikhel, Nepal.

Following the case studies conducted by ARECOP and supported by FAO-RWEDP, the former will develop guidelines with expert consultation. This will enable organisations to pursue stove dissemination, enable the analysis on the needs of industries/ institutions and on commercial stove dissemination approaches.

The training/workshop will be followed by post training/workshop survey. Local kitchen teams will develop and implement pilot projects. ARECOP will collate training materials and experiences in the form of guidelines for kitchen improvement. ARECOP will also produce a multimedia film on the subject as a post training/workshop follow up and as an introduction to other audience. A follow up workshop on kitchen improvement will be set up to compile outcomes from earlier workshop and to further determine the obstacles and successes organisations will face upon implementation.

• Small scale industrial and institutional stoves (IIS). Several case studies will be conducted on small scale industrial and institutional stoves. The information on the state of small scale IISs will then be published as a compendium. Following the case studies conducted by ARECOP and supported by FAO-RWEDP, the former will develop guidelines with expert consultation. This will enable organisations to persue stove dissemination, enable the analysis on the needs of industries/ institutions and on commercial stove dissemination approaches.

• Biomass upgrading. This will be foccused on two items, charcoal and waste resources. So far, ARECOP has organized several comprehensive trainings on improved charcoal production. We will also actively collect, document and disseminate information on the utilization of waste resources (through Glow), submit articles and announcements on the subject to other relevant publications in the region. At the same time ARECOP will encourage relevant organization to join ARECOP in rasing awareness on the potential of waste resources.

• Media development initiative. The activities will concentrate on producing multi media films on improved cookstove related technologies and relevant issues as a medium for awareness raising, education and training. Further, ARECOP will assist networked organisations in developing effective user and public awareness programs that incorporate multimedia usage.

High Quality Charcoal Getting Popular in Thailand

BY ARYANTO SUJARWO

THE IWATE KILN BROUGHT TO PAK CHONG BY MR. SAENG

Pak Chong is located 300 km to North East of Bangkok. It is close to Khao Yai district which is famous for its beautiful environment and climate. In this area, you can find a variety of fruit plantations such as mango, sweet tamarind, snake fruit and many others. For many years, wood waste from tree pruning was a major problem for many plantation owners there. It was not until the introduction of Japanese charcoal making technology brought by Mr. Saeng to the area, that not only the problem was partly overcome, it was torned into an opportunity and later became a success story.

MRS. ARROM POYEN IS ONE OF THE owners of mango plantations in Pak Chong. She has around 15,000 trees in her land. Along the border of her land she planted large and tall trees that act as windbreaker protecting the mango trees. Every six months she has to prune her mango trees resulting in huge amount of wood waste as the by product. Larger size wood waste is used for fuel but the smaller ones are just left on the ground and consumed by termites.

Mrs. Poyen explained that it is also difficult to sell the wood waste because people in the area like herself also have plenty of wood. And to sell it to other areas is also not economical due to high transportation cost. She has had this problem for years and kept complaining but no one can help her getting out of her problem.

Until one day when her brother, Saeng, who joined PAT (Promotion on Appropriate Technology Group), an NGO based in Bangkok, came home and told her that he might be able to solve her problem if she would support him putting in practice the charcoal making technology that he learned in Pontianak, Indonesia. Mrs. Poyen agreed to provide financial support for her brother to build the kiln and to practice what he learned during the training he attended.

Not like ordinary charcoal kiln that people usually use in Thailand, the kiln built by Mrs. Poyen's brother is more like a pottery kiln with a thick wall and dome shaped roof made of clay. It is called the IWATE Kiln. The kiln has a capacity of 4.5 tons of wood per firing and can yield approximately 800 kilograms of charcoal. What's more, the kiln does not only yield charcoal – it can also produce high value commodity which is Wood Vinegar*. So, besides charcoal , it can also produce roughly 150 liters of wood vinegar per firing.

"Every month I can make charcoal between two to three times , depending on the availability of wood – but most importantly I can utilize all the wood from my mango plantation, and I have no more problem with wood waste instead I can get more income from my waste." explained Mrs. Poyen.

Mr. Saeng, who initiated the building of the kiln for her sister, attended a training in Pontianak, Indonesia, in 1991. The training was on high quality charcoal making using Japanese

* During the process of wood carbonization, the wood releases a complex substance which consists of various types of mineral compounds and acids which flow together with smoke from chimney. The smoke is then trapped in a long pipe where it condenses in a lower temperature to produce a liquid, which is the wood vinegar.

In the last few years, the use of wood vinegar has been promoted in agriculture because it is more environmentally friendly compared to artificial chemicals which might endanger human health.

MRS. POYEN HAPPILY PACKS THE HIGH QUALITY CHARCOAL

technology. In the training, he also learnt to extract wood vinegar during carbonization process. He further acquired the knowledge in using wood vinegar for agriculture and animal husbandry.

The charcoal making technology follows a long history of high quality charcoal making in Japan. The technique for building the kiln has been passed on for many generations in a strict manner. The kiln is known to be able to produce charcoal with high carbon content.

The charcoal made by her quickly became famous in the area. The main consumers were food outlets such as chicken / fish grill restaurants and middle men who sold the charcoal to local shops/ market. Mrs. Poyen did not have to bring the charcoal to the market because all the buyers came straight to her house.

The users were satisfied with the charcoal because it was dense and hard, easy to ignite, "smokeless", free of bad odor, long lasting and it could still burn even when a lot of fat from chicken or fish dropped on it when roasting.

One of the user who was being interviewed said that he had no intention of using regular charcoal again. He stated: " The price is the same with regular charcoal, but the quality is much better – I will only use this charcoal and not others"

A few months later, her neighbour, Mr. Bhudhiman, built four kilns for his own use. He managed 7 hectares of land, mostly planted with acacia. Only three kilns were in operation due to government regulation which makes it difficult to transport and sell charcoal to other districts.

Like Mrs. Poyen, he also extracted wood vinegar from his kilns and is now the biggest wood vinegar producer in Thailand. He developed various types of wood vinegar based on his experiments with insects and fungi which commonly attack vegetables or crops in that area. He mixed the wood vinegar with many other ingredients such as garlic, chili, etc. Farmers using the 'new treatment' found it to be effective in increasing their produce therefore increasing their income.

Wood Vinegar, an option to increase charcoal maker's income.

In the last few years, the use of wood vinegar has been promoted in agriculture because it is more environmentally friendly compared to artificial chemicals which might endanger human health. People are also getting more aware of their health and try to consume produce which is more "natural'

Studies and research on the use of wood vinegar and charcoal in agriculture have been made many years ago. The studies have shown multiple benefits from using wood vinegar, which include its ability to control diseases and pest, to increase beneficial microbes and to facilitate roots growth.

In Pak Chong, farmers used wood vinegar solution by spraying it on their vegetables. Others used Mulberry leaves for spraying Mulberry Tea. Some Japanese companies which grow certain types of vegetables in Pak Chong, were using only wood vinegar for their crops.

Many more can be listed here, but all of the above have shown the benefits gained by farmers who use wood vinegar for their crops.

So, what are actually the benefits for the charcoal

VEGETABLES TREATED WITH WOOD VINEGAR – NATURAL AND HEALTHY!

makers ? How big is the additional income for them ? Let's see the figure below:

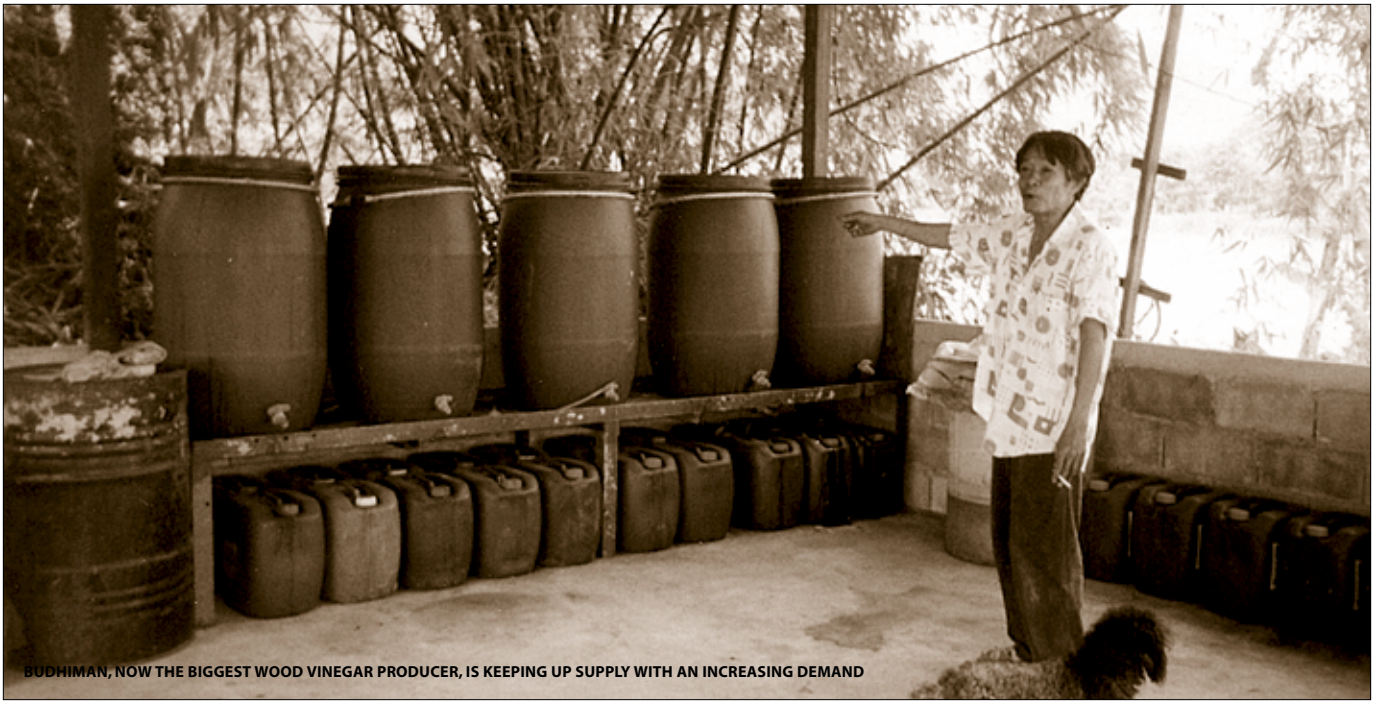
• For each firing, Mrs. Poyen could extract around 150 liters of wood vinegar and sold it for 50 Baht per liter (US$1.4). Therefore she received a total of 7,500 Baht (US$210).

• She also produced around 800 kilograms charcoal per firing which was sold for 4 Baht per kilogram, so she received a total of 3,200 Baht ($ 90).

It is clear now that the income she received from wood vinegar is more than double that from the charcoal. No doubt, that is a very substantial additional income for her.

A year later, Mrs. Poyen have one more kiln, and she made more charcoal and wood vinegar to meet the growing demand in the area.

It can be concluded that charcoal making is no longer a simple, traditional dirty occupation, but it should be seen as an activity which, if managed effectively is able to give benefits to many people, not only to the charcoal makers but also to users including farmers and others in the agriculture sector. And, most of all the biomass upgrading purpose have reached its objectives, from waste to fuel.



BUDHIMAN, NOW THE BIGGEST WOOD VINEGAR PRODUCER, IS KEEPING UP SUPPLY WITH AN INCREASING DEMAND

From Plates to Stove

BY : EDWIN SUJARWO

At a glimpse, the forests in the north and east of Laos still appears green, at least that is the view from an aircraft that passes by the regions. Even there is a regulation banning the cutting of wood without permit. However, just like in many other developing countries, uncontrolled timber exploitation still occurrs. The rate of deforestation is not balanced by the rate of reforestation. Besides being used as raw materials for constructions and in making utensils, there is also a high demand for firewood in Laos. The obvious example, was the use of firewood in traditional salt processing where salt water is evaporated using wood fired stove. Tens of cubic metres of fire-wood are being consumed in the production of crystal salts. However in one corner of a village at the periphery of Luang Prabhang city, there appears to be a gleam of hope of saving the dwindling forests, through savings in firewood household consumption via the introduction of energy efficient stoves.

AS WE SET FOOT IN CHANNEUA, A POTters village at the periphery of Luang Prabhang, Laos, we were presented with a scene typical of potters village. In courtyards of houses there, earthen plates and pans were neatly arranged in rows for drying. At the terraces, there were simple wooden pottery wheels , being worked on by skilled hands. Mounts of clay were also seen by the sides of the houses. We could see both men and women at work. The men shaped the plates accordingly while the women sat pedalling the pottery wheel. Clouds of smoke were seen everywhere from burning kilns.

Plates and *kleting* (small water container) which had just been shaped, were dried in the shade for two days, after which they were dried under the sun. When they had completely dried, they were then arranged neatly in a simple kiln for roasting. Walls of the kiln were made of bricks arranged in a manner so as to allow air circulation. The kiln was then filled with rice husk, dry leaves or saw dust. Firewood was put at the bottom of the kiln. The fire from the burning of firewood would also burn the ricehusk and other dry materials in the kiln.

There were a variety of products coming from the village; different types of plates and water container up to 60 cm high. However the dominant product was a cone-shaped mortar that is used for grinding spices or mixing raw vegetables with spices for salad.

There was also another distinctly different product, which was a cookstove commonly used in a household. It was a single stove with an alumunium/metal shell and a holder for portability. Unmistakably, it was the Thai Bucket, a cookstove popular throughout Thailand.

Will they sell ?

When the author met the 37 year old Mr. Sengphet (37), he was busy working on the Thai Buckets in his house terrace. There was no other

MR. SENGPHET AND HIS TEAM, NOW PRODUCE ONLY THAI BUCKET STOVES

product seen there, but the stoves.

"My family has been involved in pottery for many generations, not less than three generations, " said Mr. Sengphet, the father of 4 children. His grandfather made plates and pans from clay, so was his father. However the products made by his predecessors were not more than plates, pans and sometimes water container.

It was PADETC, one of the oldest NGOs in Laos that first introduced cookstove to potters in Channeua village. In 1998, several of PADETC' field workers, among others, Mr. Khamseum, Mr. Tan, and Mr. Saleumphone attempted to introduce Thai Bucket stove with charcoal as its fuel. From tens of potters in Channeua , Mr. Sengphet was the only one who was interested. Most of them closed one eye to the newly introduced stove. " Will they really sell? " most of them asked. This could be understood since the villagers were used to using three-stone stoves. While others made holes on the ground and put pans on top. Firewood supply was still aplenty around their settlements.

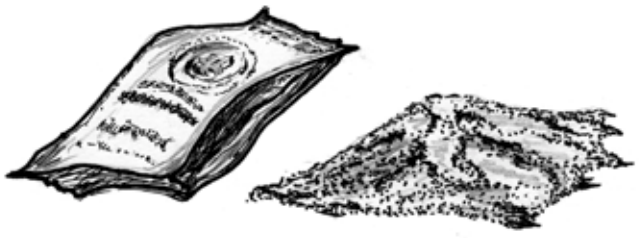
However Mr. Sengphet believed that the product (Thai Bucket) had a good prospect. There was further encouragement from PADETC' staff who gave him motivations to continue to work on the new stove design. At first he received a two week traning in PADETC' office in Vientiene, supported by RWEDP (Regional Wood Energy Development Programme). There he realized that the new stove was able to save on fuel and besides it is very easy to handle. After the training, he quickly returned to his village and put to practice what he learnt in the training. He then passed on the knowledge on stove making to one of his family members who was also a potter. Now, in Channeua they were the only potters who specialse on stove production.

For the marketing of the stoves, they received full assistance from PADETC. During the first year, Mr. Sengphet concentrated only on production. Due to strict quality control from PADETC, Mr. Sengphet was used to working diligently according to the proper technical procedures. PADETC did not only help with training and marketing, it also assisted in capital provision. For a start, PADETC imparted not less than 3 million kips in the form of equipment, mould and cash as a starting capital. As for the alumunium bucket, which was the stove liner, PADETC provided it in the form of a loan. Mr. Sengphet only paid for a bucket (the liner) for every stove sold.

The cooperation has yielded the desired results. It turned out that people like the stove's design. Mr. Sengphet accepted criticisms and suggestions with an open heart, and used them as inputs for improving the stove design. Aggressive promotions of the stove by PADETC in neighbouring provinces have resulted in high demand for it. Seeing this, Mr. Sengphet dared himself to produce only stoves and completely stopped producing other products.

Changing to firewood

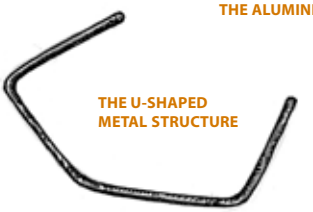
The cooperation had gone smoothly for exactly a year. Moreover, from the observations made by PADETC staff, the users sometimes faced difficulties in obtaining charcoal. Furthermore, charcoal was quite expensive. Thus the stoves were only used when charcoal was availabe and in times of charcoal scarcity, they returned to using the old stoves. Knowing this, PADETC staff tried to modify the design and adapted it to people's needs. At first the stove had only a single hole from which ash is drawn out. By adding one more hole directly above the old one, firewood could then be used as a



RAW MATERIALS:
CEMENT AND SAND

THE STOVE BODY

THE ALUMINIUM SHELL



THE U-SHAPED
METAL STRUCTURE

THE PADETC MODIFIED THAI BUCKET STOVE
WITH EXTRA UPPER SLOT AND ATTACHED METAL STRUCTURE

fuel. To hold the firewood, a U-shaped metal structure was attached to the stove's wall.

The adapted design was then introduced to those who usually used firewood as fuel. Through the adaptation, now there are two designs which could suit users' fuel preference.

Presently Mr. Sengphet produces on average 300 stoves per month. He is assisted by his wife and one of his sons – they make up the main team. Mr. Sengphet contracted some of the works such as stove installation, plastering the stove and finishing to day labourers. With the selling price between 16,000 - 20,000 kips for each stove, Mr. Sengphet acknowledged that he had already obtanined adequate earning.

"What is important is that I have enough for my daily needs ' he said with a smile. He thanked and appreciated all the efforts made by PADETC. On the other side, his two year cooperative project with PADETC will soon cease , by the end of year 2000. Nevertheless he had no worry about it at all. He had already mastered the skills of stove making and already had a market availabe for his stoves. He had made small regular savings from the profits he made and would be ready once the financial aid from PADETC ceased. In the meantime PADETC is planning on conducting similar projects in other provinces in Laos.

National Training on Improved Stove Selection and Dissemination

PUTTING THEORY TO PRACTICE
DURING THE INDONESIAN NATIONAL TRAINING

ALTHOUGH IMPROVED COOKstove Projects (ICPs) have been implemented in Asia for over a decade, too many projects over too long period of time have experienced low adoption rates. This is due to the fact that ICPs in the past had emphasized more on technical aspects while almost completely neglecting the non-technical aspects. Furthermore, up till now, improved cookstove (ICS) technical skills are still highly centralized.

In response to the above problems, Asia Regional Cookstove Program (ARECOP), Yogyakarta, Indonesia, and the FAO- Regional Wood Energy Development Program (FAO-RWEDP) based in Bangkok, Thailand, embarked on collaborative efforts to implement the Asia Regional Comprehensive Training to disseminate improved cookstove technical skills and programmatic knowledge.

Subsequently, ARECOP produced a series of comprehensive and practical manuals for ICP technical skills and programmatic development in 1996.

The first trial run of the manuals was during the Indonesian national training held in Lombok, Indonesia, at the end of 1996. Since then, based on experiences and inputs from the first training, various improvements and modifications have been made made to the manual.

The Indonesian national training was soon followed by a training of trainers (TOT), held in Lombok, from June 29th to July 8th. The TOT was organized by ARECOP, *Pusat Study Pembangunan* (Center of Development Studies) and FAO-RWEDP with funding support from FAO-RWEDP. The general aim of the TOT was to enable training team from each country to hold its own national training on improved stove selection and dissemination, using the improved stove selection introduced in the training module. Twenty participants from 8 countries (Nepal, Vietnam, Myanmar, Cambodia, Indonesia, India, Bangladesh and Bhutan) were involved and trained by two main trainers, Aryanto Sujarwo and Emma Wibowo.

Furthering the effort, comprehensive national trainings on 'Improved Stove Selection and Dissemination' were launched in several countries : Cambodia, Vietnam, Bangladesh and Nepal, during the 1997-1999 period. In general, the trainings were aimed to impart ICP skills, enabling participants:

- To evaluate stove design based on combustion and heat transfer concepts, knowledge of raw materials and technical stove parts
- To determine an appropriate modification/improved stove design based on needs, wants and conditions of target groups
- To become familiar with construction techniques for a selection of different stove designs
- To determine an appropriate dissemination strategy based on existing technology dissemination channels and improved designs to be disseminated
- To incorporate gender analysis in stove design and introduction
- To monitor the progress of a stove programme and trouble shoot

PARTICIPANTS OF THE TOT WORKSHOP, PUTTING THE TRAINING RESULTS TO GOOD USE.

where necessary

At the end of 1997, *Centre d'Etude et de Development Agricole Cambodgien* (CEDAC) together with European PRASAC I, Concern World Wide Kampong Chhnang, Cambodia Fuelwood Saving Project organized the Cambodia's national training. The training, as part of the overall ICS program in Cambodia was of significant relevance – in a country where 92% of the population still relied on biomass as energy source, but where there was a severe lack of local stove expertise. This training was also made possible with the supports of the RWEDP.

Participants came from NGOs as well as government institutions (including those from agricultural institutions) sectors. Combinations of indoor and outdoor exercises were carried out during the training. Almost half of the training was held outdoors where participants received hands on sessions in stove construction and combustion experiments. Part of the outdoor activities also allowed participants to make analysis on non technical aspects of stove directly in the communities and incorporate them in ICS design. The training put a lot of emphasis on small group discussions and practical activities. What we had after the training were personnels with stove know-how, keen to implement sustainable ICPs based on people's need and local conditions.

Meanwhile, in Bangladesh, the Institute of Development Affairs (IDEA) conducted the national training in 1998. The training was part of a stove dissemination program supported by FAO-RWEDP with technical assistance provided by ARECOP. Trainers involved were those who attended the earlier training for trainers and they were: Nazmul Haque of IDEA, Lulu Bilquis Banu of BCSIR with the assistance of Abu Zaher of VERC.

The eleven-day training was made up of three components; a classroom based training, field exercises and practical exercises. Another feature of the training was its focus on gender centred approach – i.e. women's (as stove users) views and recommendations had been prioritized. Participants from ten local and international NGOs were involved in the training. As part of the training, the participants were also required to produce a six-month plan of action.

As a follow up to the training, monitoring and evaluation was done to asses the extent to which participants followed up their plan of actions. The monitoring showed that up to 20 % of the training participants were able to make a follow up to their original plan of actions, while the other 38% implemented their modified plan of actions.

Shortly after the Bangladesh national training, the Nepalese national training was held in November 1998, organized by the Research Centre for Applied Science and Technology (RECAST), Tribhuvam University, Kathmandu with support from FAO-RWEDP. The trainers were K.M. Sulpya and Ram Gopal Bista of RECAST, Sushila Sharma and Sita Ram Luitel and ARECOP supervised the training.

In the local context, the felt urgent need was in improving the skills of stove project managers and field workers so that they would be more able to make appropriate choice on stove design. This would mean designs of stove which could both satisfy the energy needs especially for the rural and semi urban poor while also conserve the ever declining source of fuel, the forest.

The learning by doing method featured strongly in the training. Selected communities, which the participants visited, were made as case studies. Based on the information collected and

THE PRACTICAL EXERCISE COMPONENT OF THE BANGLADESH NATIONAL TRAINING

experiences gained from the case studies, participants applied the principles of stove selection. Practical sessions had the participants selecting raw materials, designing, installing and using different stove designs.

"Now I know that improved cookstove is not always the smokeless Chulha, but it can be of any improved design based on local people's need and resources'" was a comment made by one participant of the Nepalese national training. To make it even more eventful, on the last day of the training, the cook in the training centre was given an opportunity to select one of the stoves made by the participants and to use it immidiately. "Super fine stove" was the comment of the cook when asked for an opinion. "I will built another one," added her husband.

In Vietnam the national training was held in March 1999. For a start, it was known that a lot of ICS programs have been mostly technology driven, therefore, one of the main focus of the training was to make participants aware on the importance of integrating the non-technical with the technical aspects for successful ICPs. Another locally known problem was the centralization of ICS/ICP skills. Participants were therefore selected from a wide variety of areas except for South Vietnam from which there was no representation.

Apparently the kind of training, participatory and field-based was quite new for the Vietnamese participants. Consequently, participants had to make adaptations to the new method during the first few days. Despite the 'gruelling' adaptation period, participants appreciated the fact that they were exposed to such training method – where they could learn a lot by participating and by directly practicing what they learnt in theory. The trainers of the Vietnam national training came from HAI and the Vietnamese Women's Union with a back up support from ARECOP's manager, Christina Aristanti.

By far, we have seen the role of the training toward constructive nationwide networking and the decentralization of ICP skills to the lowest appropriate level; bringing together various organizations in a trans sectors (NGO, government and academic sectors) training for a common goal of better ICS dissemination. With stronger networking capabilities and enhanced decentralization of ICP skills, further local initiatives could be developed more effectively to increase the success rate of stove programs.

ARECOP hopes to conduct more training throughout the region. For example, the Myanmar national training, which will be jointly organized by RWEDP and ARECOP, is scheduled for October this year.

Looking Ahead: ARECOP in Year Two Thousands

ARECOP YEARLY PLAN

COUNTRY FOCUS

At the start of the phase II in the year 2000, ARECOP's country focus will be:

1. Nepal

2. Bangladesh

3. Indonesia

4. Sri lanka

5. The Philippine, and

6. Vietnam.

PROACTIVE NETWORKING

1. Publication

Glow will remain ARECOP quarterly publication - to be published in March, June, September and December. *Letter from the Secretariat* (*LfS*) is a monthly bulletin which facilitates communication among network members as well as keep them informed on developments of cookstove programs and activities at the secrearіat. *Dossier of Recomended Publications* will be continued and published twice this year, in mid and end of the year.

2. Other publications;

- "Compendium on Small Scale Industrial and Institutional Stove"
- "Asia Regional Training for Trainers" manual
- "Palm Sugar" manual.
- "Guidelines for Kitchen Improvements"
- Video materials on cookstove dissemination and kitchen improvements
- "Roster of experts": there has been a delay in the publication of this. Data sent to ARECOP earlier through questionnaires are being collated and will be published as a classified index.
- ARECOP's website: we will soon have on line information. Items which will be featured in the homepage include contents of Glow, ICS technical information, profiles on ICS in various countries, data base on ICS organisations and experts and an information on ICS dissemination strategies.

3. Skills and Capacity building for ICPs

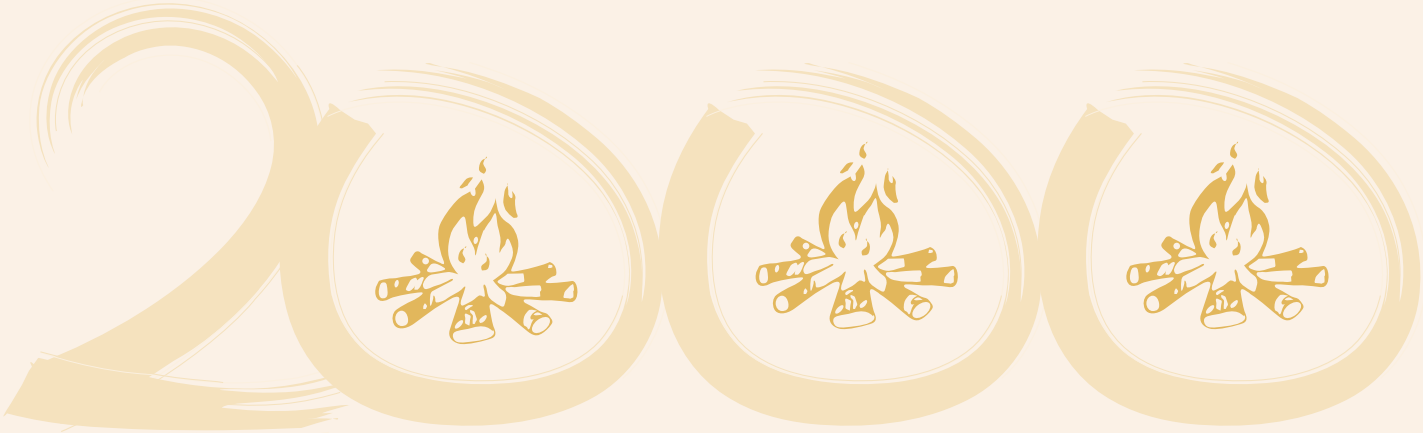
Throughout the year, ARECOP will continue to identify the needs for skill buildings in certain organizations. ARECOP will then facilitate members of the organizations to attend relevant trainings /workshops.

4. Network coordination and bridge building

In order to strenghten the network ARECOP will conduct country visits. Beginning in March, two of our staff members had visited Nepal, Bangladesh, Laos, Cambodia and Malaysia. More countries willl be visited later in the year. Our staff will also attend international meetings to further promote ICS in the international forum.

5. Planning Technical Advisory Meeting (PTA)

PTA meeting will be held again in June this year, the first time since 1996. This will be held in Bangkok and partly supported by the FAO-RWEDP.



NATIONAL LEVEL INITIATIVES

1. Strenghtening of national level networks

At this time we are reactivating/ strengthtening national networks in several countries through CCPs established in the past. This is done in Nepal, Bangladesh, Sri Lanka, Phillippines, Indonesia and Vietnam. A CCP will then coordinate the sharing and exchanges of human, material and financial resources at national level. To realize this, ARECOP will facilitate communication and co-operations among ICPs as well as other relevant organisations and other sectors.

2. Facilitation of sub national ICP development

Organisations in countries with little history of ICPs, have not been able to develop mature cookstove programs. For such countries, ARECOP will aid to facilitating the development of national level ICP. This includes assisting such organisations in participating in regional activities, in developing sound program plan and in providing access to information and in stimulating the active supports and participation of international aid agencies locally.

REGIONAL LEVEL INITIATIVES

1. Skills building

2. National level training for the decentralisation of ICS skills and knowledge

Five trainings have been completed during the 1996-99 period. ARECOP will continue to organize such trainings in two other countries in this and the next year.

3. Incorporation of gender considerations into ICP case studies and Using indigenous knowledge in ICP

A workshop on gender, jointly organized by RWEDP and ARECOP is scheduled to be held in October this year. By December ARECOP will organize case studies on gender in ICPs in five countries. Members of ARECOP will be contacted to develop these case studies.

4. Monitoring

Workshops on monitoring on the effectiveness of ICPs will be held in five countries, Indonesia, Laos, Cambodia, Thailand and Sri Lanka. Later this year, ARECOP will also assign CCPs in those countries, to conduct the monitoring on ICPs in their respective countries. ARECOP will develop general monitoring methodology and a questionnaire which will be adapted to local conditions, and then collate and analyse the monitoring results.

STOVE READY FOR MAKET AND TRANSPORT IN CAMBODIA

BOOKS, PUBLICATIONS AND RESOURCES

BOOK

Gender in Energy - Training Pack

The training pack has been designed for training professional energy planners in government service or NGOs in developing countries. It suggests how rural energy planning could adapt and take into account gender issues. First it tries to draw attention to the extent to which women's interests have been neglected; then it borrows gender planning methods used in rural development planning and agriculture and shows how these can be applied in energy planning. Thirdly it reviews and develops frameworks for dealing with gender issues from the beginning to end in project planning and implementation. Finally it considers strategies on how to persuade the planning institutions to adopt such tools and procedures.

For copies write to:
University of Twente,
Technology and Development Group (TDG)
PO BOX 217, 7500 AE Enschede
The Netherlands.

VIDEO CASSETTE

CHARCOAL MAKING IN THAILAND

For more information please contact:
RWEDP Asia, c/o FAO Regional Office for Asia and the Pacific,
Maliwan Mansion, Phra Atit Road
Bangkok 10200, Thailand

CD-ROM

RWEDP ON THE INTERNET

The CD-ROM contains the website of the Regional Wood Energy Development Program in Asia and all the software which is necessary for accessing it. On this CD-ROM you will find extensive information in the field of wood energy such as : information about 16 member countries, nearly 40 publications, 13 issues of RWEDP newsletter, overview of issues in wood energy, LEAP energy planning model.

For more information please contact:
RWEDP Asia c/o FAO Regional office for Asia and the Pacific, Maliwan Mansion, Phra Atit Road, Bangkok 10200, Thailand.
Fax : +66-2-280 0760
Ph : +66-2-280 2760
Email: rwedp@fao.org

BOOK

Improved Stove Selection And Dissemination: Asia Regional Training of Trainers Workshop, Mataram, Lombok, Indonesia, 29 June- 8 July 1997.

RWEDP documented the TOT workshop held in 1997 in Mataram, Lombok, Indonesia. This report contains brief descriptions on aspects of the TOT which include : background of the TOT workshop, the TOT framework, the field exercises conducted, the stove construction exercise, the teaching of practice sessions and the formulation of national training plans.

Copies are obtainable from:
RWEDP Asia c/o FAO Regional Office for Asia and the Pacific, Maliwan Mansion, Phra Atit
Road, Bangkok 10200.

NEW RESOURCES

ARECOP has been granted several copies of the following documents by the RWEDP:

1. Indian Improved Cookstove: A Compendium
2. Improved Solid Biomass Burning Cookstoves – A Development Manual
3. Energy And Environment Basics

For copies of the documents, please contact either the RWEDP (c/o FAO Regional office for Asia and the Pacific, Maliwan Mansion, Phra Atit Road, Bangkok 10200, Thailand) or ARECOP (PO BOX 19, Bulaksumur, YKBS, Yogyakarta, Indonesia).

We will publicise books,
publications and announcements sent to Glow.
So please send them in.