

glow

VOL. 35 - MAY 2005

A DAY WITH MR. VANNA, VIENTIANE LAOS

EMERGING ICS IN THE PHILIPPINES

ICS COMMERCIALIZATION IN CAMBODIA

THE JUMBO STOVE OF PESANTREN IBNUL QOYIM

ICS FOR REDUCING ENVIRONMENTAL
DEGRADATION IN TIMOR LESTE

GAS STOVE USING RICE HULLS AS FUEL

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PUBLISHER

Asia Regional Cookstove Program

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SUBSCRIPTION

For a subscription, please contact
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Glow are available upon request

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PRODUCTION

Postmo Plus

ISSN

0853-4497



ARECOP

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

Dear Readers

This edition of GLOW addresses cases of successful ICS commercialization in Lao P.D.R., the Philippines, and Cambodia, and specific examples of how ICS can improve communities and schools in Indonesia and Timor Leste. The individual articles in Volume 35 are expanded on below:

"A Day with Mr. Vanna, Vientiane Laos" follows the business of one Laotian entrepreneur who has commercialized sales of Thai Bucket stoves. This article includes insight into how Mr. Vanna tried to deal with copycats and how he was able to successfully make his cost of production lower than that of competitors. This article was written by Aryanto Sudjarwo after he visited Mr. Vanna's plant in Vientiane.

Fery Lumampao from Approtech Asia in Manila wrote "Emerging ICS in the Philippines," with Christina Aristanti of ARECOP for this edition of GLOW. The article traces the history of the movement toward ICS commercialization in different parts of the country. Issues such as scaling-up production and micro-financing for ICS are discussed.

Commercialization of the New Lao Stove in Cambodia got off to a good start, but then encountered difficulties. The story of the commercialization effort across the country will be informative for readers considering this dissemination method for ICS. "ICS Commercialization in Cambodia" details the organizations involved in the training of ICS producers and their success in cutting into the market share of traditional stoves in Cambodian markets. This article is written by Mr. Iwan Baskoro from CFSP.

Yuni Supriyati and Pius Herin of Jaringan Kerja Tungku Indonesia bring us "The Jumbo Stove Of Pesantren Ibnul Qoyim." This article elaborates on specific applications for the use of larger ICS at school facilities in Indonesia. As an example of an unusual stove, some of the design specifications and construction techniques are included. The impact the stove has had on those using it is elucidated for the reader.

This edition also includes a short update from a recent joint trip between CUSO, MAP, and YDD to Timor Leste to re-start connections with local NGOs and explore the possibilities for assisting local ICS dissemination efforts. Indar Priyaji, of ARECOP, discusses the potential implications for wide-spread ICS dissemination on depletion of forest resources in "ICS for Reducing Environmental Degradation in Timor Leste."

Engineer Alexis Belonio, from the Appropriate Technology Center at the Central Philippines University, sent us a profile of a rice hull burning gas stove, showing us a technology that is available and now becoming more affordable for the public.

Happy Reading!

Table of Contents

A Day with Mr. Vanna, Vientiane Laos <i>Aryanto Sudjarwo (ARECOP)</i>	1
Emerging ICS in the Philippines <i>Fery Lumampao (Approtech Asia) & Christina Aristanti (ARECOP)</i>	4
ICS Commercialization in Cambodia <i>Iwan Baskoro (Cambodia Fuelwood Saving Project - CFSP)</i>	8
The Jumbo Stove of Pesantren Ibnul Qoyim <i>Yuni Supriyati & Pius Herin (Jaringan Kerja Tungku Indonesia - JKTI)</i>	11
ICS for Reducing Environmental Degradation in Timor Leste <i>Indar Priyaji (ARECOP)</i>	15
Gas Stove Using Rice Hulls as Fuel <i>Engineer Alexis Belonio (Appropriate Technology Center, Central Philippines University)</i>	16

A Day with Mr. Vanna, Vientiane Laos

Aryanto Sudjarwo
ARECOP

His clothes full of dirt and charcoal dust, his hand holds a piece of metal rod that will be fixed on the clay pug mill. He gave orders and directions to two other men busy with the repair of the machine - the broken clay-mixing machine was ready to work again soon. Mr. Vanna, the owner of a stove factory, is a mechanical engineer and also a good businessman - he started making stoves after he was trained in making the Thai Bucket stove. By profession, he is a lecturer at the National University of Laos in the Department of Mechanical Engineering.

That afternoon he brought me to see all the processing stages of his production. In the front yard, there were mounds of rice hulls, which were still burning and parts had already turned black. Just behind that, there were six small kilns made of bricks with a height of about 60 cm and many holes in the walls. These kilns were being fired full of stoves, using rice hulls as fuel. In the middle of the workshop there was an open space where stacks of stoves were drying; two boys were busy placing stoves in the line so they would each receive the maximum amount of sunshine. In total, there were about 25 workers in the production and they produce 4,000 ICS each month.

Mr. Vanna took me to the back yard of the workshop, where there was a pond with a surface area of about 1,000 square meters. Three men were collecting the clay by diving into the water and digging it out of the bottom of the pond. They went up and down to bring the clay to the edge of the pond. "This is my secret deposit," he explained. "I bought only a small



Making the stove body using a mold

piece of this land a few years back, but I know that the clay deposits here are good quality - so I bought more land and use as much as I can. I have to dig down in the soil to get to the good clay deposits underneath, but during the rainy season it fills with water and creates a pond like you see now," he further explained.

After the pond, he took me to see other stages of processing, such as making the metal buckets. "This is

the expensive part of the stoves. I use cooking oil cans because they are cheap and this metal bucket is then painted black to hide defects and bring a new look."

We continued talking about the situation of the business, the development of the designs and technology that might improve production. He said that he is now focusing on the Vientiane market only, where he continuously supplies about 50 shops. Although

his capacity has now increased to 4,000 ICS per month, it is still not enough to fulfill demand. In fact, many other shops also ask him to supply them because his stoves are famous among users. The shopkeepers like his products since the return on their investment is high.

A shop near the central market could sell around 5-10 stoves per day, but Mr. Vanna cannot supply more than 50 stoves each month. This situation causes a dilemma, because the shops have to take different quality stoves from other suppliers in order to maintain their stock but, in many cases the users complain about the durability and performance of the 'look alike' ICS which are inferior compare to Mr. Vanna's stoves.

Some of the 'look alike' ICS producers are his ex-employees who saw the potential business for making ICS with the main motivation to get money. But in most cases they sacrifice stove performance by reducing the amount of holes in the grates and using a poor quality of clay. Thus



Mr. Vanna in his workshop

production cost is low and their profit is bigger. This situation is not good because in the long run, people might think that ICS is not so different from other traditional stoves. What can he do in this dilemma?

When talking about this, his face looked sad and he said: "I went to my ex-workers' workshop to ask why they make such poor quality stoves, and I explained openly to them how to produce standard quality of ICS in a proper way. At least they would listen to me as their ex-boss. But the result was nothing. Maybe they think that I want to control their production and am afraid of their products as competitors. Now, I don't want to do that again - it can lead to misunderstandings and I have no



Sun-drying the stoves before firing in the kiln

time anymore."

From the discussion, it appeared that one of his key successes is in production efficiency that keeps the cost of production competitive. The availability and location of clay as an important raw material is as close as possible to the processing center so there is no transportation cost. Rice hulls as fuel and components in the clay mixture are free, taken from a rice mill not far from the workshop. Every afternoon Mr. Vanna brings empty plastic sacks to the mill with his truck. He then loads the truck with rice hulls to the maximum height toleration by the police so they cannot catch him.

All of the workers are boys from outside of town, some even come from other provinces. The situation in the workshop is more like a big family, where there are rooms where all of them can stay. The workers are happy because they do not have to spend money for rooms and transportation and during the evening they can do simple work such as trimming the grates, punching holes in the grates, etc. while they watch television or chat with others to get additional income. This system makes the output of most workers high and both parties are happy.

The other important key factor is the market: all of the 50 shops selling Mr. Vanna's stoves are within Vientiane and the surrounding area. They are easy to access with the truck, which keeps transportation costs low.

After we finished cold drinks, Mr. Vanna asked me to go with him to drop some stoves off at two shops and on the way back pick up rice hulls because one of the shops is close to the rice mill. The truck was



The stove is inserted into the table (center)



The stove beneath the table

The restaurant was located on a lake, still in part of the town. The famous food of the restaurant is “Shabu Shabu,” a kind of Japanese food where you cook yourself by putting all the ingredients, such as meats and vegetables, in a bowl with soup (dashi). The tables have a special construction - a hole in the center where a charcoal stove can “sink” into the table and the soup bowl sits on top of the stove.

When we stepped into the restaurant, almost all the tables were fully occupied; fortunately we got a small table in the corner. From my table, I could observe the whole room and part of the kitchen where they prepare the charcoal stoves to be used for each table. The owner of the restaurant is a friend of Mr. Vanna and they like very much to use the stoves because they produce high heat, no smoke, and with just a few pieces of charcoal, it can last for over two hours. They tried using different stoves and they found that there is a big difference in quality and performance compared to Mr. Vanna's products. These differences affected their restaurant business - so they decided to only use his stoves and they are proud of it.

filled with 50 stoves and plastic sacks for rice hulls. He asked four of the boys to come with him and sit in the back. We went around to the shops for about an hour and I learned that all the stoves he brings to the shops are bought with cash - that is a good system. The shop owners looked satisfied with their supplier and I saw them chatting and laughing together - it seems that they have a good business relationship.

My watch shows it is 16:40 and we went to the rice mill to fill the truck with rice hulls. I watched the four

boys scooping the hulls into the sacks and carefully stacking them in the truck. We drove back to the workshop to unload the rice hulls. The workshop was empty and only a few boys were still busy in front of the kiln pouring new rice hulls on top.

Mr. Vanna took me to his home and I washed my face and hands while he took a shower. Today was a hard working day and it was time to enjoy the evening with good food and cold beers. He promised to take me to a famous restaurant in town where they use his stoves.

This reputable restaurant brings good free promotion for Mr. Vanna's stoves. Many customers who come to this restaurant often ask about the stoves and the owners proudly explain the positive aspects about them.

We finished the meal at 22:00 and headed back home directly. I had spent a great day with Mr. Vanna. I understand that he is entitled to his success because he is a hard worker, good engineer, smart businessman, and moreover he puts a good heart into his work. *glow*

EMERGING ICS IN THE PHILIPPINES

Fery Lumampao
Approtech Asia

Christina Aristanti
ARECOP

One of the passions of Filipinos is food. Generally, even on ordinary days, three full meals are served in a day—breakfast, lunch and dinner. Still many others, even in rural areas, eat five times a day if you include morning and afternoon snacks. Almost all food preparations require cooking and heating. In addition to these food preparations, which are usually cereal and rootcrop-based, either hot tea or coffee is served. One can imagine a kitchen with a traditional cookstove blowing eternal smoke and burning red from dawn to evening.

The Philippines is a developing country in Asia with a population of over 68 million, 80 percent of which still depends on biomass for primary cooking fuel. The biomass used is mainly fuelwood or agricultural waste collected from surrounding land. Yet, up to the year 2000 in the Philippines, there had only been a few small and fragmented initiatives for ICS production. Marketing happened at the village or municipal level through the efforts of local NGOs like for the *Silkalan* of AGTALON, and rice hull stoves were promoted by the Affiliated Non-Conventional Energy Centers (ANECs) of the Department of Energy, to mention a few.

Why was it that neither development actors, NGOs nor the Government of the Philippines was interested in addressing biomass fuel issues despite the fact that biomass has been the primary fuel used by a majority of the population? Are the government and community not interested at all in ICS? This is possible. We can conclude this because somehow



The MPA implementation in Tigbauan, Ilo Ilo

ICS seems to have never been introduced and disseminated or comprehensively addressed nationwide. We can also note that one reason they may not have been interested is because ICS was not a profitable enterprise.

Recognizing the urgency and need for an ICS program, in early 2000 Approtech Asia and the Asia Regional Cookstove Program

(ARECOP) discussed the importance of having a sustainable strategy for ICS dissemination in the Philippines. These discussions gave birth to the first national “Potter’s Training on Improved Cookstoves” and the evolving partnership between NGOs and ANECs with interested and innovative potters. Partnerships were preferably with those potters



who already produced traditional cookstoves or flowerpots.

Representatives from the Department of Energy were invited by Approtech Asia to attend the planning of the training and from then on participated in training and other workshops. This is how the partnership began between the government and non-profit sector to encourage ICS use among a broader population in the Philippines. Participation from the private sector has come in the form of retailers of traditional stoves, who then decided to carry ICS stoves as well. Inventor-entrepreneurs were also selling their own stoves in malls and supermarkets or through scientific and technological exhibitions.

All organizations involved hoped that the partnership would bring about mutual understanding through studying the technical features of traditional cookstoves, modifying these to come up with an efficient and appropriate cookstove design, and then promoting that design to end-users. This partnership was designed to continue and

strengthen after the training as both partners face the challenges of producing, promoting and marketing stoves. This collaboration takes into consideration the reality that not all partners were trained entrepreneurs.

The main objective of this partnership is to encourage NGOs and ANECs together with potters to start producing ICS for

commercialization. The NGOs and ANECs will supervise quality, especially of the technical features of the ICS. Whenever necessary or when demand is high, the partners will improve the capacity of potters to mass-produce ICS through micro-financing, enterprise management and capacity building, or simply through assistance with marketing or promotion of ICS.

Steps Toward Larger Scale Dissemination

The potter's training took place in Bulua, Cagayan de Oro in February 2001 and was attended by 10 technical and social development workers from NGOs and ANECs and 10 potters with an international trainer / expert provided by ARECOP. The training lasted for 12 days while potters and technical staff analyzed traditional stove designs and discussed the cooking habits of their respective communities. The partners (NGOs/ANECs and the



The trainers are enthusiastically trying to make a new model of ICS



The ANAGI stove from Sri Lanka was adopted in Ilo Ilo

potters) spent time learning about the technical features and qualities of improved pottery stoves, such as the ANAGI stove from Sri Lanka and the SAE stove from Indonesia, which have already been commercialized. They then designed their own improved cookstove and produced prototypes, sharing designs among themselves and even working on cost calculations for the ICS that they chose to develop and produce when they returned home.

It should be noted here that the potters, NGOs and ANECs also brought their own soil/clay and traditional stoves they produced. This arrangement was to ensure that soil quality and mixture were addressed during the training in order to produce good-quality stoves.

The new improved cookstoves produced during the training were a hybrid of the ANAGI and SAE, taking the features of the ANAGI but with the size and body of the SAE stove.

The partners' enthusiasm to produce and sell the improved cookstove was very high. So, upon arrival in their respective communities, the potters produced the ICS and the technical staff introduced and sold new units in the market.

In Ilocos Norte, the technical staff sold ICS during the Agriculture Caravan and also during festivals through actual demonstration by cooking banana cue (sugar coated banana) to show the performance of the stove. They usually sold all units available after the demonstration. It was very inspiring. However, the excitement did not last long. Just as all love stories do not have a happy ending, the honeymoon was over when, during one public cooking demonstration, the stove started cracking. This situation did not dampen the spirit of the partners. They continued to produce ICS, hoping they would hit the right mix of materials as they gained more experience. ICS continued to sell in certain villages and orders were coming faster than the potters could produce the stoves.

Dozens of ICS units were sold in Ilocos Norte, Panay Island, Cebu and Davao where the potters tested the market. The NGO and ANEC partners made an effort to popularize ICS and link-up with progressive organizations through the retail market for clay flower pots and traditional clay stoves.

Approtech Asia, ARECOP's Country Contact Point, coordinated ICS activities in the Philippines. The problems of



Improved charcoal stoves developed at Appropriate Technology Center, Central Philippines University

quality and commercialization of ICS were discussed extensively, while Approtech sought ways to deal with the slow and difficult take-off of ICS production with respective NGOs and two surviving ANECs. Although the demonstrations had been rather successful at the village level, it was difficult to get momentum going for a national ICS program. The issue of seed capital surfaced during the discussion. A small initiative fund was then made available on a cash basis to the NGOs and ANECs to start purchasing ICS products to assist potter-entrepreneurs. The fund was also used to assist in the marketing and promotion of ICS in addition to the efforts made by respective potters through their own marketing channels and shops.

The potters experienced various difficulties and downfalls when they started mass-producing ICS. Despite the financial assistance, potters who marketed ICS on their own were not encouraged to produce enough because of the time spent making the stove. Although ICS sells at a higher price than their traditional pottery products, it also takes more time to make and consumes more space in the kiln. Six of the ten potters who went into production did not own a kiln. Three of them used open firing while two others rented a commercial kiln. Only one had use of a kiln because family members own a pottery business.

Micro-financing for ICS Dissemination

The most crucial problem faced by potters was the quality of the new products. This problem was identified during monitoring from



Econo-Dalikan, concrete ICS, developed at Appropriate Technology Center, Central Philippines University

the northern to the southern part of the country by ARECOP together with Approtech Asia. The potters and respective NGOs and ANECs were visited in their production areas to see the products and to listen to their problems.

Based on the results of the monitoring and the discussion of problems faced by potters and NGOs in their production of ICS, ARECOP and Approtech Asia organized a Refresher Training with three main resource persons. They were Mr. Auke Koopmans, a clay expert who helped to analyze and overcome cracking problems; Mr. Amarasekera of IDEA, an ANAGI stove production and dissemination expert in Sri Lanka; and Mr. Aryanto Sudjarwo, a SAE stove production expert in Indonesia.

The Refresher Training propelled the real take-off of ICS production in the Philippines. The quality of ICS was enhanced and there was a significant improvement in performance as well. The Refresher Training assisted the technical staff in getting the right mixture of

materials in the production of the clay for the body of the stoves so that they would no longer crack during use.

Two years after the long and tedious struggle for the commercialization of ICS, a partnership with a micro-finance institution, Taytay Sa Kauswagan Inc. (TSKI) fueled the marketing of a thousand ICS in less than one year's time. Rainier Roa, an ex-trainee potter who became a trainer and entrepreneur, was given assistance by TSKI in the construction of his own kiln. He has since trained more than 200 potters on Panay Island through TSKI.

Another potter, Agustin Cabance, became a trainer and entrepreneur in the southern Philippines. He has trained youth potters in Vigan, Ilocos Sur and in San Nicolas, Ilocos Norte through the able assistance of Ms. Irma P. Acebedo and Dr. Letty Flores-Gudoy of the Mariano Marcos State University ANEC in Batac. One potter-entrepreneur in Pangasinan, Maximo Tendero, succeeded in marketing his ICS by himself. He

was not originally a potter, but an electrician. His interest in pottery, creativity, and persistence, however, made him succeed in ICS production and manufacturing.

ICS, the potters, NGOs and ANECs underwent a painful journey towards the commercial market. But persistence has high rewards and quality products always find a good place in the market. The demand for ICS is still much higher than the production rate. There is a need for more potters. ICS has become accessible to the poor segment of society as the price is reasonable, but unfortunately the lack of supply has kept dissemination from a broader population.

The recent increase in the price of gas is increasing demand for ICS in all regions of the country and across all economic levels of society. Many health professionals, teachers, employees and students, among others, promote ICS by word of mouth. Someone who sees ICS in the kitchen of a neighbor is compelled to buy her own unit. It has come to a point now where there is no longer a need to promote the stove for its performance. Those who know the benefits of using ICS find the cost insignificant. It must also be noted that some health workers have been promoting ICS at the village level.

ICS is now a profitable business. There are cooperatives and women's associations who request training for their potters and are willing to engage in ICS commercialization. Many women users are waiting in long queues with money in their wallets ready to pay for new ICS. It is about time to pick one up now if you still do not have one in your kitchen! *glow*

ICS Commercialization in Cambodia

Iwan Baskoro
*Cambodia Fuelwood
Saving Project (CFSP)*

ICS commercialization in Cambodia today is the result of a long process since the end of 1997. Development has taken place over several years since Cambodia stopped suffering from a long civil war.

Before 1997-1998, ICS had been introduced but not on a large scale, and was mainly designed for palm sugar processing (introduced by GRET).

By the end of 1997, a project called Cambodia Fuelwood Saving Project (CFSP) started to work on ICS in the province of Kompong Chhnang. The project was operated by collaboration between Groupe Energies Renouvelables en Environnement et Solidarité (GERES) and Yayasan Dian Desa (YDD).

This three year-long project was able to set up a basis for national scale dissemination of ICS.

Two of the most important achievements of the three-year project were the decision to choose commercialization for an appropriate ICS dissemination method, and the choice of a portable improved cookstove.

The decisions were made keeping in mind the following factors: most families were using traditional Lao Stoves for cooking, they were burning charcoal and fuelwood in these stoves, and the traditional cookstoves were commercialized. External evaluation of the project also emphasized the importance of working on commercialization of the ICS.

The last consideration was that the design of the traditional Lao Stove in Cambodia is quite similar to that

of a traditional cookstove in Thailand.



Picture 1. Traditional Lao Stove



Picture 2. New Lao Stove, adopted from Thai Bucket Stove

Training Stove Producers

The project collaborated with a Cambodian national NGO, Centre d'Etude et de Développement Agricole Cambodgien (CEDAC), and identified and invited a number of producers of traditional Lao Stoves to join the training on Production and Dissemination of Improved Lao Stoves. The training was partly supported by ARECOP and RWEDP-FAO, and the trainers



Picture 3. Training in NLS production