

**Solar Cookers
International...**
1919 21st Street, #101
Sacramento, CA
95814 USA


Tel. 916-455-4499
Fax 916-455-4498

E-mail: [info@
solarcookers.org](mailto:info@solarcookers.org)

Volume 11, Number 1
([Back Issues at http://solarcooking.org/docs.htm](http://solarcooking.org/docs.htm))

Solar Cooking Archive:
<http://solarcooking.org>

April 2005

Paper Circulation: 9,000
Online hits: 

In This Issue

News you send
Spain to host 2006
international solar cookers
conference
Mary Frank: artist,
activist, solar cook
World solar cooker leaders
collaborate
Solar cookers: a tool for
guinea worm prevention
SCI to further advocacy
efforts
Still out of reach
"HotPot" cookers kindle
interest in sun-baked Mali
EU launches carbon
dioxide credit trade
Your power to do good
Tributes
Major solar cooking study
available for download
Solar cooking empowers
kids in Taiwan



News you send

Editor's note: "News you send" is compiled by Ramón Coyle, SCI's information exchange specialist. E-mail your news items to ramon@solarcookers.org or mail to Ramón Coyle, Solar Cookers International, 1919 21st Street #101, Sacramento, California 95814-6827, USA. Please include your contact information. All submissions are subject to editing.

AFRICA

Uganda

The Disabled Technicians of Uganda have produced over 100 solar cookers. They seek the donation of a computer, software, printer and modem to help them expand their work. *Contact Edward Sembajjwe, Disabled Technicians of Uganda, Ltd., P.O. Box 30895, Kampala Central 256, Uganda. Tel: 256-344951, e-mail: sembajjweed@yahoo.com*

THE AMERICAS

Bolivia

David Whitfield, husband of Bolivia's extraordinary solar cooking promoter Ruth Saavedra de Whitfield, traveled to the United States in July to attend the Microfinance Institute's conference on microenterprise and the environment. David reports that he provided attendees with information about solar cookers, showed off Solar Cookers International's panel cookers (CooKits) and presented a computer display of solar cookers from around the world. David reports that Paul Munsen of Sun Ovens International also attended and demonstrated the giant Villager Sun Oven(r). The solar cooking promoters made new contacts with people from Haiti, the Philippines and various Central American and African countries. *Contact David Whitfield by e-mail: david.cedesol@gmail.com*

Brazil

Engineer Joao E. Rios of the University of Brasilia reports that the school has developed its own parabolic solar cooker and plans to encourage its use through many projects. *Contact Joao Rios by e-mail: riosjoao@globo.com*



Professor Arnaldo Moura Bezzera of Brazil has just had the fourth edition of his book published. The book is called "Aplicacoes

Termicas da Energia Solar." Topics include solar water heaters, solar distillers, solar cookers, solar dehydration of agricultural products, and solar electricity production. *Contact Arnaldo Moura Bezzera by e-mail: mourabezerra@uol.com.br*

Chile



El Canelo de Nos is a non-profit organization that has worked for 20 years to serve low-income communities, especially in the IV region of Coquimbo. Oscar Nuñez Martínez, who directs environmental programs for the organization, says that the average family uses 10.5 tons of firewood per year - an



environmental cost that can be relieved by solar technologies. The program often works with Juntas de Vecinos, or "neighborhood groups." In 1994, 92 families from various neighborhood groups in the Rio Hurtado valley obtained 92 wooden solar box cookers through the El Canelo de Nos program. Similarly, the "mothers' center" in Pichasca obtained 40 metal solar box cookers in 1998, while an additional 182 solar cookers of various types were delivered in 1999 to families in the Rio Hurtado valley, along with 10 solar fruit drying systems. Three hundred families gained economic benefits from reduced fuel usage and food preservation. Various services were provided to a high school in Pichasca in 2001, including educational materials for the students and provision of a parabolic solar cooker. In 2003, El Canelo de Nos traveled to Rinconada in Region V, where 70 families were mobilized to struggle against desertification - with the help of a variety of solar cookers and fruit dryers. *Contact Oscar Nuñez Martínez by e-mail: onunez@elcanelo.cl*

Colombia

Jesus Gomez of APROTEC Tecnologia Apropiada reports that his organization has given community workshops for building solar cookers in a variety of poor regions of Colombia. Over 100 solar cookers have been built in these workshops. APROTEC is also involved with solar electricity, solar water heating, wind power, micro-hydro power and biomass fuels. *Contact Jesus Gomez, APROTEC, Calle 15 BN #9 AN-42, Cali, Colombia. E-mail: aprotec@telesat.com.co*

United States

The Rhode Island Solar Energy Association (RISEA) demonstrated solar cooking at the University of Rhode Island's "GreenShare Field Day" in September, as it had at the June "Sustainable Living Festival" in Coventry, Rhode Island. RISEA members say demonstrating is an enjoyable experience. They answer questions, hand out literature and promote conservation and sustainable energy applications. (Source: RISEA's Helio newsletter.) *Contact RISEA, 42 Tremont Street, Cranston, Rhode Island 02920, USA.*



Sun BD Corporation is a new business in the United States planning to sell a solar/electric hybrid cooker imported from India starting in 2005. The "Tulsi-Hybrid" cooker lets users cook with free energy on sunny days and with electricity at night or on cloudy days. A company



spokesperson says the user can combine both sun power and electric power on "sun in and out" days. The initial price will be \$319.00 plus shipping and handling. The company plans to market the cooker through major outdoor recreation and camping stores in the United States. *Contact Dave Chalker, Sun BD Corporation, 2028 Leader Road, Waterloo, New York 13165, USA. Tel: 315-549-8730, e-mail: sunbdcorp@seneca24.net, Web: www.sunbdcorp.com*

ASIA/PACIFIC

Australia

Andy Walker of Sydney suggests that Thai chicken curry is an ideal food for drawing crowds to a solar cooking demonstration. "The aromas bring the crowd around," Andy writes. If you can afford a little heat loss, Andy recommends the following: "To make sure the smells escape, when closing the bag with a wire twisty, leave your finger in the top of the bag, which means there is a funnel for the aromas to get out." Note - the word "bag" refers to a transparent, heat-resistant plastic bag used as a heat trap in panel-typed solar cookers like the CookIt.

India

Dr. Sathyavathi Muthu reports that 2,500 students from the Avinashilingam Institute in Coimbatore spend three hours per week in villages throughout Tamil Nadu testing solar cookers and demonstrating them to women's clubs and self-help groups. The students also promote solar cooking on campus. With funding from the governmental Ministry of Non-Conventional Energy

Sources (MNES) they produced recipe books and developed two models of solar box cookers that have been certified by the government. *Contact Dr. Sathyavathi Muthu, Family Resource Management, Avinashilingam Deemed University, Coimbatore 641-043, India.*

R.S. Sundar is creating an Internet page listing solar products, resources and usage in India. The page www.geocities.com/sundarrs/solarindia.htm is a work in progress.

India's national newspaper, The Hindu, recently featured a village in Andhra Pradesh that no longer uses any conventional fuel. The village of Bysanivaripalle began installing biogas plants roughly 20 years ago, and from that experience the 36 families in the village were primed to embrace solar cooking. The newspaper quotes villager Sadananda Reddy as saying, "With 23 biogas plants and 26 solar cookers, we do not have to use a matchstick." In addition to solar cooking all types of food for themselves, the villagers are planning to bake cakes and biscuits with solar energy to sell in nearby towns. The village's laundry expert heats his iron with a solar cooker, enabling him to stop buying coal. The village saves 72 tons of firewood - or 5,832 kilograms of liquefied petroleum gas - each year, reducing yearly carbon dioxide emissions by over 100 tons. This solar cooking project, like many others, involved international cooperation. INTERSOL, an Austrian nongovernmental organization, sponsored the project, and Gadhia Solar, a leading Indian solar organization, carried it out. The SK-14 parabolic solar cookers were developed by Dr. Dieter Seifert of Germany. *Contact Jagadeeswara Reddy, Non-Conventional Energy Development Corporation of Andhra Pradesh (NEDCAP), 10-161, Gandhi Road, Chittoor - 517 001, India. E-mail: solarreddy2002@yahoo.co.in*

Gianni Bighignoli and Maria Teresa traveled across India last year promoting solar cookers. In January they taught solar cooking skills in Bangalore (Karnataka) using modified solar box cookers and Solar Cookers International's panel-type cooker, the Cookit. Says Bighignoli, "There was a lot of interest about it and solar cooking started to be improved by the Sisters and craftsmen of the towns." Next, the travelers visited Chennai (Tamil Nadu), where they spent many days teaching folks how to solar cook, and ultimately helped organize a women's cooperative for building and selling multiple types of solar cookers. In Andhra Pradesh Mr. Bighignoli and Ms. Teresa built 20 solar box cookers and demonstrated them in 10 towns, and facilitated the formation of work groups to further develop solar cooking in the area. They spent several days at a number of local schools, where solar cookers are now much appreciated. Despite rains, they also spent two weeks promoting solar cooking in Jowai (Meghalaya). Though Mr. Bighignoli is uncertain of his impact, he has received follow-up letters from Chennai

and Jowai that are "full of enthusiasm." *Contact Gianni Bighignoli, Via Guella 5/c 39055, Laives-BZ, Italy. E-mail: giannibig@tin.it*

India/Nepal

Martijn Schildkamp is an architect from the Netherlands who is concerned about very poor people in South India and Nepal. He wants to use his skills to build housing for them in sustainable and ecological ways, while researching how to lower construction costs. He will also research cultural acceptance of alternative approaches to building. Three topics have his special attention: building with natural materials, building with discarded materials, and use of passive energy - solar cooking in particular. He would like groups in South India or Nepal who are interested in seeking his services to contact him. In late 2004, he met with community leaders in Salem (Tamil Nadu) where they discussed building four pre-literacy schools and a training center. He also met with the Waste Wise Trust in Bangalore (Karnataka), an organization that reclaims valuable materials from the waste stream, and he is investigating the potential for recycling materials from demolished buildings. *Contact Martijn Schildkamp by email: martijnschildkamp@gmail.com. Web: www.smartshelterfoundation.org*

Malaysia

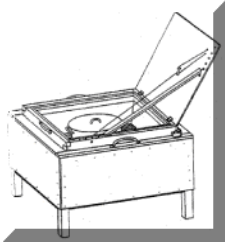


Alex Kee has developed a solar water pasteurizer and storage device called the Solar Kettle-Thermos Flask (SK-TF). Its primary component is a solar vacuum glass tube, also known as an evacuated tube, made of borosilicate glass (Pyrex(r)). The inner-most glass layer has a dark external coating that heats up in sunlight. The outer-most glass layer is transparent, allowing sunlight to pass through. The air has been removed ("evacuated") from between the layers, creating an insulative vacuum. "One of the setbacks of any solar thermal water heating system is that when you want hot water most - like in the morning to make hot beverages when the sun is still asleep - it fails you," says Mr. Kee. "The SK-TK is not just a solar kettle; it is also a 'Thermos' flask that keeps water hot overnight with thermal loss of less than five degrees Celsius."

Use is straight forward: simply set up the included tube stand, insert the tube, adjust the angle toward the sun, fill the tube with up to two liters of water, and cork the opening. According to Mr. Kee, pasteurization temperatures are usually reached in one to two hours. *Contact Alex Kee by e-mail: akayconsult@yahoo.com, tel: 6016-763 2095, fax: 607-223 9071, Web: www.solarwyse.cjb.net*

EUROPE

Germany



A German organization called Project KiWi has posted construction plans on the Internet for wooden solar box cookers developed by the Swiss organization ULOG. These cookers have been built, used and appreciated in many countries worldwide. The instructions are available in German, Spanish and English at [www.med.uni-](http://www.med.uni-magdeburg.de/~maercker/SolCook/SolCook.html)

[magdeburg.de/~maercker/SolCook/SolCook.html](http://www.med.uni-magdeburg.de/~maercker/SolCook/SolCook.html). Contact Christoph Maercker, Project KiWi, Pfeifferstr. 9, D-39114 Magdeburg, Germany. E-mail: Christoph.Maercker@mrz.uni-magdeburg.de, Web: www.med.uni-magdeburg.de/~maercker/kiwi99.html

Spain to host 2006 international solar cookers conference

In accordance with resolutions passed at the recent Asia/Africa seminar of solar cooking leaders, Solar Cookers International (SCI) is pleased to announce the 2006 international solar cookers conference in Granada, Spain from 12-16 July, 2006. The host organization is Fundació Terra of Barcelona, Spain. SCI is proud to play an active role as co-sponsor of this sixth international conference.

The conference will provide an exciting opportunity to share advances in commercialization, dissemination, technical innovation and design, and explore new collaborations among solar cooking experts and enthusiasts, nongovernmental organizations, businesses, governments, environmentalists, gender experts, civil societies, donors and funding agencies for wider dissemination and promotion of solar cooking and solar water pasteurization.

The conference will provide a forum for sharing insights and suggestions for creating a world where solar cookers are a universal, integrated tool for reducing environmental degradation, protecting families and communities from waterborne and smoke-related diseases, and reducing energy costs.

Further details, including registration information and procedures for submitting abstracts, will be available on the conference Web site www.solarconference.net beginning in May.

Contact Marta Pahissa, Fundació Terra, Avinyó, 44, 08002 - Barcelona, Spain. Tel. +34 93 601 16 36, e-mail: solar@terra.org, Web: www.terra.org.

Mary Frank: artist, activist, solar cook

By Jacki Lyden



Wherever she goes, whatever she does, artist Mary Frank never misses an opportunity to talk to people about the small bit of cardboard she thinks could help better humanity.

"This little something is what could save millions of lives from waterborne diseases after the tsunami," says the painter and sculptor. She is speaking of the cardboard planes of the solar cooker, which she finds visually appealing. She unfolds the silvery wedges of

her cooker like an origami puzzle, very carefully. Only this is simpler than any origami puzzle. "It's like a kid's toy," she marvels, "and yet it can pasteurize water. It can cook without wood. It's low-tech." Mary has unfolded the solar cooker on the ledge of her New York loft's south-facing windows, on the porch of her home in Woodstock, New York - practically any place she could get a few people together and demonstrate. She's a cook's activist and an activist's cook.

I first saw her delight a group of artists with the solar cooker last summer at Yaddo, an art colony in Saratoga Springs, New York. Mary Frank is an artist of enormous stature, about whom books have been written. She's been collected by nearly every major American museum, including the Whitney and the Metropolitan Museum of Art. Born in England in 1933, she's been recognized as one of the most important artists of her generation. Thus she is an influential friend to the solar cooking movement, though she would undoubtedly say the benefit is entirely hers.

"You see all we need is a few hours of light and we can have a delicious fruit compote." She was making food outside her Yaddo studio as she painted. Artists and musicians and writers bicycled by for a taste of yummy plums and berries; I was one of them. But truth be told, of the dozen or so people who stopped by that day, none of them had ever heard of solar cookers or seen them deployed. And that under-representation is part of what drives Mary. I have been traveling in and out of war zones for National Public Radio

since 1989, mainly in the Middle East, and I had never heard of nor seen a solar cooker; not even in Afghanistan, where I would think its need among the greatest.

It is, of course, the humanity which draws Mary to evangelize about this device - the saving of women's lives since by using it they don't have to hunt for scarce, precious firewood. They don't have to risk rape and injury in conflict zones where cook fires provide the means of heating food. Mary also likes the saving of scant resources. So many of these places - Afghanistan, Africa, Southeast Asia - are denuded and suffering erosion and crop failures because of extensive foraging for cooking fuel. I remember once being delighted at finding wood cutters all over Kabul (Afghanistan) so that I could provide heat for my home which only a month before had been a Taliban dwelling. Then one day I stopped to consider that the barren landscape had once been heavily forested. We were burning down our natural resources, like the Russian folk story of the man who uses his furniture for fuel. For Mary, the solar cooker equates with individual dignity, with the simple life-affirming qualities of clean, safe food and water. But what is extra delicious, if you'll forgive the pun, about her advocacy for this cause is that Mary can take the solar cooker to some intriguing places it's never been before.

For example, in recent years she's cooked at the Cooper-Hewitt Museum in New York, making brownies as part of a solar exhibition. She concedes that for many people, one must overcome a sense of disbelief that the solar cooker can actually cook.

"Since the discovery of fire," she says, "people have cooked with wood, or other combustible stuff. People don't think this will work."

I admit to being a skeptic myself - until she whipped up the compote and later, some mushroom fricassee. We didn't have time for fish or chicken that day, but she assured me it could be done. And hey; you can wander away from the cooker as much as you like because the food doesn't burn, and it remains very, very juicy! (I liked that part a lot.) But even in Woodstock, New York - a beacon of self-considered social enlightenment - she said it's hard to get people to take the homely little device seriously.

"When I'm invited to talk about my work someplace," said Mary, "I take the solar cooker along. I give a talk and show slides of my work, and that's expected. What's not expected is that then I show the pictures of the solar cooker being used in many countries. Half the world cooks with wood. Every family uses over a ton [each year]. People never think about it. India uses dung; South America too. All these things are extremely carcinogenic, and I believe that people don't consider this. When an artist comes to visit people

are thinking they're going to hear about the work. But I want to talk to them about much more."

Mary first heard about the solar cooker while visiting friends Jean Louis Bourgeois and his wife Caroline outside Taos, New Mexico, about 15 years ago. Bourgeois, the son of sculptor Louise Bourgeois, was living without electricity. Caroline gave Mary some information, and she was off in search of the solar cookers. At the time solar cookers were commonly big boxes, capable of cooking 14 pounds of food but too big to be shipped anywhere. So Mary made her own small one.

She was met with lots of resistance. "Americans all wanted to know how long cooking would take," she smiles. "And Europeans wanted to know if the food was any good."

Now, out comes the cooker when friends come over. She'd cook salmon and wild rice. Last year, she cooked for a group of 14 Afghan women scientists visiting Woodstock. "I made dal, lamb, curry, tomatoes, onions, lemons - all the things I thought they would like. Being scientists, they grasped right away what the cooker is able to do and how important it is."



In Mary Frank's beautiful paintings, myth and mystery play such an important part in the transformation of life and dream life. Her passion for expanding solar cooking around the world mirrors her creative aesthetics. "It's like the sun," she says. "It's a huge wheel. So women (and typically it is women in these countries) can put the food in black metal pots in the cooker before noon. Children can go to school instead of gathering wood. Women do not have to stand at a cookstove stirring. They can be less subservient as a result. The food follows a natural cycle of light."

"I can't think of anything more revolutionary," she says. It would be nice if Solar Cookers International got more attention she believes, and more profile for its work and what it does. That's her hope: more money, and more profile. And then she talks about a *tagine* she's going to make in her solar cooker; with lamb or chicken and a cinnamon stick, lemons and prunes, dates and almonds. She'll do it on her window ledge in Manhattan. Or maybe on a bright spring day in Woodstock. That's the other thing about the cooker - she can cook ahead, and then go paint.

Editor's note: Mary Frank has been a strong supporter of Solar Cookers International (SCI) - and a vigorous promoter of solar cooking and solar water pasteurization in general - for more than a decade. She takes every opportunity to influence and educate people about the need for and benefits of solar cooking. She also is a wonderful solar cook and has graciously hosted SCI events in New York and helped to build a growing cadre of SCI supporters there. Jacki Lyden is a correspondent and host for National Public Radio. Currently she is working on a new book about a friendship that began in Saddam Hussein's Iraq, called *Vox Babylonia*.

World solar cooker leaders collaborate

By Bev Blum, SCI Executive Director

In February Solar Cookers International (SCI) hosted 50 dynamic individuals from 20 countries in an exciting Asia/Africa seminar of solar cooker leaders in Nairobi, Kenya. A primary seminar goal was to identify specific collaborative opportunities to accelerate the spread of solar cookers where they are needed most. Simeon Lesrima, a representative of the Kenya Ministry of Planning, opened the seminar by declaring governmental support for solar cooking. "Several facts demonstrate the need for the solar cooking technology to be promoted and expanded countrywide. The technology is modestly inexpensive, easy to construct from local materials, simple to use, portable and requires little maintenance," he said.



During four intensive days of discussions and decisions these solar cooker leaders shared recent advances, defined resolutions, committed to several actions, and began planning the next international conference on solar cooker uses,

dissemination and technology.

Recent advances

Seminar attendees shared several recent solar cooker advances. For example, new, diverse solar cooking technologies are becoming available, including rooftop arrays of parabolic reflectors that generate cooking steam for large institutions to cook up to 30,000 meals per day. Larger-scale community projects for household cooking and solar water pasteurizing are sprouting up as well. It was also noted that documentation of health, economic and environmental benefits from solar cooker use is on the rise, and that networking and information exchange among hundreds of independent promoters worldwide is increasing. Lacking, however, is sufficient documentation of effective solar cooker dissemination and government policies that encourage renewable energies.

Resolutions

A number of resolutions were developed in support of solar cookers as devices to address smoke related health problems, urgent fuel scarcities and environmental problems. The resolutions focused on seeking governmental energy policies that favor - or at least don't impede - renewable energies, greater collaboration with peers, increased attention to broad marketing and awareness campaigns, and business promotion for long-term sustainable spread. The resolutions are available in their entirety on the Solar Cooking Archive <www.solarcooking.org>.

Actions

Eight action groups defined specific tasks for the next year. Here is a summary:

Educators group: led by Prof. Sathyavathi Muthu from India, Norman Mhazo from Zimbabwe and Prof. Shyam Nandwani from Costa Rica, will gather curricula for teaching about solar energy and solar cooking at all levels from solar cooker programs worldwide and draft recommendations and guides

Health educators group: led by Dr. Naim Liniger-Janmohamed from Kenya, Marlett Wentzel from South Africa and Marta Pahissa from Spain, will gather studies documenting health benefits of solar cooker use - including vitamin and nutrient retention in food, reduced illness and injury from smoke- and fire-free cooking, and reduced incidence of waterborne disease through solar water and milk pasteurization

Businesses group: led by Margaret Bennett from South Africa and Shirin Gadhia from India, will encourage commercial producers of widely-used solar cooker models to share and distribute information on design, materials, production and marketing

Humanitarian agencies group: led by Gordon and Grace Magney from Afghanistan, Sanu Kaji Shrestha from Nepal and Barbara Knudson from USA, will develop a disaster relief packet - to include several means to cook food - that is distributed by relief agencies after disasters

Youth agencies group: led by Barby Pulliam from USA and Alison Curtis from Switzerland, will explore networks to teach youth and, in turn, encourage the youth to teach others.

Government agencies group: led by Herliyani Suharta from Indonesia and Joseph Odey from Nigeria, urged all delegates to encourage governments to include solar cookers in their strategies to implement United Nations Millennium Development Goals, and to bring similar wording to an upcoming Asia/Africa conference in Jakarta, Indonesia in April 2006

Media group: encouraged all delegates to seek local coverage to tell their stories and expand public awareness of the need for - and benefits of - solar cooking

Peer networking group: SCI will draft and share ideas for an international solar cooker association and/or network

2006 international conference

Seminar attendees chose Granada, Spain as the location of the next international conference on solar cooker uses, dissemination and technology. The conference - to be held 12-16 July, 2006 - will be hosted by Fundació Terra, of Barcelona, and co-sponsored by SCI. Planning committees were formed at the seminar. The conference website is <http://www.solarconference.net>.



At the seminar, the African nations were represented by Kenya, Sudan, Nigeria, Somalia, South Africa, Tanzania, Uganda and Zimbabwe. The Asian nations were represented by Afghanistan, China, India, Indonesia, Nepal and Turkey. Multinational programs included representatives from Costa Rica, Germany, Netherlands, Spain, Switzerland and USA.

The seminar would not have been possible without generous support from Good Works Institute.

Solar cookers: a tool for guinea worm prevention

By Ramón Coyle, SCI Information Exchange Specialist

Worldwide efforts to eliminate the horrible suffering caused by guinea worm infection (dracunculiasis) have reduced the spread of the disease, yet tens of thousands of people in Africa are still infected. People become infected by drinking stagnant water containing a water flea that is itself infected with the larvae of the guinea worm. These larvae grow inside the human body, and can reach three feet in length. After a year, the worm emerges through the skin, slowly exiting through a painful blister. Intense, long-term or even permanent suffering or crippling results.

There is no cure. There is no immunity. But there is prevention.



Dr. Mercy Bannerman of Ghana has been promoting the use of simple solar technology to pasteurize drinking water in three districts of the country where the guinea worm is endemic - East Gonja, West Gonja, and Tamale.

Dr. Bannerman reports that 15,000 individuals from 600 households in the three districts benefited in the first year of the program.

"Community members who have received the cookers have been keenly pasteurizing their drinking water and storing it in separate water pots. They have reported a significant decline in the incidence of diarrheal diseases."

Dr. Bannerman says the reduction in diarrhea is "an immediate, noticeable fact."

However, her real target is the guinea worm. Infection is usually diagnosed one year after the larva enters a person's body and slowly grows to a large, mature worm that begins to emerge through the skin to spew new larva into water. (Infected individuals often soothe their pain by soaking in water, thus unknowingly contaminating the water.) Therefore, about one year after solar pasteurization becomes popular, Dr. Bannerman expects to see a large reduction in new guinea worm cases, just like she has already seen a reduction in diarrhea.



She writes: "In comparison to others working in the same area, this intervention is more affordable and multifunctional, impacting on several things at once."

An added result has been a better understanding and acceptance of issues that had been communicated to them previously, from the persistent follow-up visits."

Follow-up visits to new users of solar cookers have long been preached by Solar Cookers International, and Dr. Bannerman's project has put that idea into practice.

The project involves four key steps:

1. Awareness creation. The public is educated about the solar cooker technology and its use in disease prevention.
2. Training of local leaders. An existing network of coordinators and volunteers - already involved in guinea worm eradication efforts - were tapped to lead public education efforts. These trainers learned solar cooking principles and how to produce and use the "CooKit" panel-type solar cooker.
3. Training of end users. The trainers in turn taught larger numbers of end users how to make and use CooKits to pasteurize drinking water.
4. Persistent monitoring. Trainers and project staff repeatedly follow up with end users to ensure proper techniques and cooker maintenance.

Regarding monitoring, Dr. Bannerman writes, "Zonal coordinators and village volunteers actively went round from compound house to compound house to follow up the end users' techniques in handling the cooker and storing water after pasteurization, to provide encouragement, and to discuss any problems encountered. Damaged cookers were repaired during these visits. Group meetings were held, bringing together end users to share amongst themselves successes and failures."

In addition to the steps mentioned above, Dr. Bannerman and her team found time to provide briefings and additional information to the regional director of the Ministry of Health, staff of the Regional Health Administration, the director and staff of the National Guinea Worm Eradication Program, and staff from Global 2000 - a Carter Center program focused on guinea worm eradication.

Editor's note: Dr. Bannerman holds a masters degree in public health and is a Fellow of the West African College of Physicians. She has done work for the Ghana Medical School and the government of Ghana, as well as being active with the Rotary Club of Accra. In addition to serving her home country, she has provided medical expertise in Malawi, Nigeria and Sierra Leone as well. Contact Dr. Mercy Bannerman, P.O. Box 1189, Accra, Ghana. E-mail:

mercyb@wwwplus.com.

SCI to further advocacy efforts

By Bev Blum, SCI Executive Director



In the November 2004 Solar Cooker Review I began a series on Solar Cookers International's new strategic plan to the year 2010, describing the first of its six major initiatives - to achieve self-sustainable spread of solar cooking and solar water pasteurization in Kenya.

The second major initiative is to influence local, national and international policy-makers to support solar cooking. Our first activity was hosting an exciting Asia/Africa seminar of solar cooker leaders in Nairobi, Kenya this past February. (See "[World solar cooker leaders collaborate](#)") As an added bonus, this event brought together for the first time nearly all our African and American staff to learn from each other. All seminar participants now have a renewed appreciation for the immense value of active information exchange and collaboration.

Other activities planned for the next two years include:

1. Advocacy to the United Nations (UN) and other international organizations by our volunteer UN representatives in New York and Geneva
2. Visibility at major conferences including InterAction Forum 2005 in June, Spain's Encuentro Solar in July, and shared exhibit space with ClearDome Solar Thermal at the International Solar Energy Society (ISES) 2005 Solar World Congress in August
3. Collaboration with Fundació Terra and the Asia/Africa seminar action groups toward the 2006 international solar cookers conference - the first to be held in six years
4. Serving as secretariat for an international consortium, conceived of at the Asia/Africa seminar, that will enhance networking and collaboration at national, regional, and international levels

You, our supporters, are energizing the worldwide network of independent solar cooker promoters and enhancing everyone's commitment and effectiveness.

Still out of reach

By Margaret Owino, SCI East Africa Director

The "CookIt" - a panel-style solar cooker produced by Solar Cookers International (SCI) - continues to uphold its reputation as a simple, practical solar cooker. Its many benefits include ease in setup and use, compact size for storage, portability and affordability. The CookIt weighs just half a kilograms, folds to 31 x 34 centimeters, and in Africa costs less than \$5 each.



Despite this relatively low cost, the CookIt is still out of reach for many rural families who need it most. In Nyakach, Kenya - where SCI's Sunny Solutions project is located - this has proved to be a real challenge in the quest for dissemination through commercialization.



SCOREPS Elizabeth Orang (left) and Seline Osian in Nyakach, Kenya

Beginning in October 2003, the CookIt was made available in the community through trained Solar Cooker Representatives (SCOREPS). SCI's eastern Africa regional office developed mechanisms to market the CookIt and to create awareness through a range of activities, thus paving the way for the SCOREPS to realize success in selling the solar cookers. Thus far nearly 700 CookIts have been sold after overcoming and/or managing various challenges, including:

- Low and infrequent rates of payment, often requiring several trips over many months to the buyer's home to collect installments.
- Waning enthusiasm due to extended waiting period to take possession of the CookIt and begin enjoying its benefits. (CookIts are not received until fully paid for.)

Perceived quality and status issues with cardboard as construction material. To many, it's "just a carton. Why should it cost so much!" Limited capacity of a single CookKit to meet the cooking needs of large families.

SCI has debated and reflected over these challenges. Here are a few mechanisms that have been employed to overcome them:

Suggesting to new solar cooks in women's groups that they use "merry-go-round" funding to buy CookKits. (In this system each member regularly pays a small sum into a collective account, which is disbursed in lump-sums to individuals in a rotating fashion thereby allowing for purchases that would normally be too expensive.) Maintaining interest through home visits and public demonstrations. Educating the community as to the functionality and value of the CookKit as a real cooking device - not just a piece of cardboard. Creating radio advertisements to highlight the CookKit's many benefits. Developing and circulating flyers that outline economic benefits to consumers who solar cook. Sample phrasing: "A family that uses 30 Kenyan Shillings (Ksh) worth of firewood or charcoal each day will spend 900 Ksh per month on fuel. Yet CookKits costs only 550 Ksh each, and with good handling can last up to two years." Liaising with local administrative, political and church leaders in spreading the word. Demonstrating and lecturing in schools to influence the youth and, through them, raise awareness with their parents and guardians.

We are proud of the courageous first adopters - the SCOREPS - and congratulate them on their achievements so far. However, we still need to reach around 4,000 families who urgently need the CookKit, and we would welcome and appreciate innovative solutions to the challenges we face. Thank you for your support.

"HotPot" cookers kindle interest in sun-baked Mali

By Christine Danton

During a recent trip to Mali, I awoke at 4:30 a.m. one morning as the crowing of roosters and the call to Morning Prayer cut through the stillness. Women had already started their wood fires and were preparing breakfast for their families -- usually porridge made of rice or millet. Sometimes this

task falls to young girls, especially if their mothers have already left the village to forage for cooking fuel.

In Mali, as in most African countries, it is the women who shoulder the burden of foraging. It is hard labor requiring hours away from home and family. Even when they can collect enough to sell, the compensation is meager. A donkey cartload of wood brings less than \$3.

Family supervision is often left to an elderly female relative or to neighbors. It is the women who go to market, process grains, rear children and tend the garden. In short, women perform all domestic chores.

Each cartload of wood lasts a week for the average family, bringing the cost of fuel wood to at least \$11 per month. In some cases, that is one-quarter of a family's income. Most wood is collected during the dry season and stockpiled unprotected from the elements. During the rainy season it becomes more expensive as supplies dwindle. It also smokes more if burned when wet. (Smoke is linked to an increased risk of respiratory disease.)

The rising cost of cooking fuel and lack of available alternatives are undoubtedly having adverse effects on economic development. It is also causing cultural change. For example, the gathering of the family three times a day for meals is a strong tradition that is breaking down because of high cooking fuel costs. In urban areas, where prices are highest, some families are gathering for only one meal and will search for food elsewhere at other times in order to lessen the family burden.

In the Saharan towns of Timbuktu and Kidal wood supplies have vanished altogether. In rare cases when some wood turns up in the Gao marketplace, it is bought within minutes of its arrival. Most people are reduced to cooking with dried camel dung. It is in these areas of northern Mali that the need for an alternative, clean cooking fuel is most urgent.

Mrs. Aissata Sissoko, an entrepreneur in Bamako, recalls her most recent visit to Gao: "When I woke up in the morning, my hostess was upset. She explained that she was unable to prepare a hot breakfast for me. She told me that she had been searching late into the night for wood, and had continued her search early in the morning. Unfortunately, she found nothing."

Mrs. Sissoko lamented, "Maliens are all very tired. Everywhere I go everyone is talking about the immediate need for an alternative fuel. We live in this vicious cycle of working tirelessly to earn a humble salary, then spending it

all to buy food and fuel for cooking. Cooking fuel is so expensive, but we have no choice."

Bottled gas (liquefied petroleum gas or "LPG") is not a viable alternative cooking fuel. First, it is unavailable to the 70% of the population who live in the countryside. What's more, even the government-subsidized price of LPG is much higher than traditional fuels. Even relatively prosperous Malian families cannot afford to use bottled gas exclusively.

According to the United Nations, 88% of the energy used in Mali comes from wood, charcoal or animal waste. Six million tons or more of wood are consumed in Mali each year, an estimated 20 times more wood than is replaced. The Mali government reports that each year, the desert advances six kilometers further into habitable territory. "The situation has reached a critical point," says Mr. Gnibouwa Diassana, who works in the Agroforestry Department of World Vision Mali. "We have to act now to introduce an alternative, or face catastrophe in the near future."

In the capital city of Bamako, the fuel of choice is charcoal. It's the cheapest fuel, easy to transport and smokes less than wood, but it is a fundamentally inefficient energy source: when wood is burned to make charcoal, over half of the energy is lost. The average family will go through a 35-kilogram bag in about a week, bringing the monthly cost to at least \$11. Depending on the season and the size of the family, this figure can triple. By comparison, the same family will spend up to \$8.25 for millet each month and up to \$13 for good quality rice.

Because wood is consumed at an unsustainable rate, providers must go ever further into the countryside to meet demand. They sometimes travel 40 or 50 kilometers from town with a donkey cart to collect a load of wood.

Yet there is an alternative and virtually unlimited energy resource found in Mali -- the sun. Temperatures during the day, any time of year, can approach 40°C. The sun is relentless. A large tree stands in the courtyard of every dwelling, no matter how modest. Its shade is a family's only escape from the oppressive heat. Periodically, as the sun's shadow moves, everyone under it will gather up his or her mat in unison and move with it.

The move to harness this energy has finally begun. In some of these rural areas, which may never be attached to an electrical grid, the sun is powering photovoltaic panels that generate electricity for light and a TV or a radio. Solar panels are also being installed at some schoolhouses and medical centers.

Solar ovens create cooking temperatures by directing the sun's energy on a dark cooking vessel and - with most types - insulating the vessel against heat loss. Solar ovens will lessen the burden of firewood collection and decrease the risk of respiratory illness and of burn injury. Best of all, the fuel that powers them is free.

"Making use of the sun's energy is a simple solution to a complex problem. We have a free source of energy here in Mali and can easily take advantage of it by using solar ovens and solar dryers," says Mr. Diassana.

A variety of solar oven designs are available to meet varying needs and budgets. One with wide application is a new panel-style oven (so named for a dominant feature, reflective panels that surround a glass-enclosed covered metal pot) called the HotPot.



A unique aspect of the HotPot is the custom, five-liter black pot that is suspended by its flange inside a transparent tempered glass bowl, creating an insulating air space around the pot

A HotPot prototype was sent to Mali in 2003 for testing by a local entrepreneur, generating interest on two counts: Malians are not only tired of having to depend on their traditional fuels, they are increasingly concerned about environmental degradation. Many see solar ovens (and the HotPot in particular) as an attractive, efficient alternative.

In June 2004 I traveled to Mali, a country I had come to know and love as a Peace Corps volunteer, to introduce solar cooking to several development organizations, including the Peace Corps. Demonstration attendees found solar cooking to be simple and non-time consuming, and the food it yielded savory and well cooked. They concluded this technology could give women extra time for child rearing, literacy classes or income-generating activities.

For its part, Mali's government has already recognized solar energy's potential to help its people; it has suspended import duties on solar technology products in an effort to "increase the access of isolated, low

income populations to basic energy services to help achieve economic growth and poverty reduction targets."

Some of the most acute health and environmental problems confronting Malians -- and, for that matter, hundreds of millions of other Africans -- appear intractable. With solar cooking, the lack of cooking fuel need not be one of them.

Editor's note: Christine Danton was a recent Peace Corps volunteer in Mali and is currently an associate of Solar Household Energy (SHE), a nonprofit organization based in Chevy Chase, Maryland (USA). Among other activities, SHE promotes the HotPot solar cooker.

EU launches carbon dioxide credit trade

On January 1, 2005, the European Union (EU) formally launched the world's first international system to trade "credits" for reduction of carbon dioxide pollution of the world's air supply. As of that date, businesses that use large amounts of energy will have to monitor - and lower - their carbon emissions. Those who fail to lower their carbon emissions will be fined. To avoid being fined, companies will be allowed to buy carbon emission credits from companies that reduce their emissions beyond the required level. Backers of the trading of carbon emission rights hope the new program will enable Europe to meet its target of an eight percent cut in carbon emissions by 2012 (compared with 1990 emissions). Some observers believe that an expanding worldwide system for trading carbon credits could provide a source for funding large-scale solar cooker projects that can measurably reduce carbon emissions.

Your power to do good

When you can you afford to be generous ...

Solar Cookers International (SCI) is making a world of difference. Your generosity will be gratefully used to strengthen the spread of the solar solution on behalf of people and the planet.

Please consider these giving options:

SCI in your will

"I give and bequeath to Solar Cookers International of Sacramento, California \$_____ (or _____% of my estate) to be used for its humanitarian purposes."

Investing in SCI

If you have a choice between donating appreciated stock or cash to SCI, there are two tax advantages of donating stock. First, you receive an income tax charitable deduction for the full market value of the stock at the time it is donated. Second, you avoid paying any capital gains tax on the increase in value of the stock. You can invest in SCI and invest your cash in current stock. It's a win-win situation! (A.G. Edwards serves SCI donors.)

Spreading the word

Recruit potential members by creating interested friends. "Did you know that simple solar cookers can relieve health, financial and environmental burdens facing millions of people-- A \$50 contribution to SCI helps spread simple solar technologies for cooking and water pasteurizing."

Contact Virginia Callaghan at (916) 455-4499 to discuss donations and stock transfers. Consult your financial planner for additional information. Thank you.

Tributes

Tribute gifts have been given to SCI by:

Susan D. Hopkins in honor of her cousin, Deborah Drysdale
Milton and Jean Le Roy in honor of Jack and Judy Witt
Carol N. Gerlitz in memory of her husband, William A. Braddock
Carol N. Gerlitz in honor of her son, Eric S. Johnson
Carol N. Gerlitz in honor of her son and daughter-in-law, Kirk L. Johnson and Heather Walters
Mary Frank in memory of Pablo Frank
Janis E. Faulkner in memory of her father, John R. Faulkner
Alice M. Stek in honor of her brother, Paul Stek

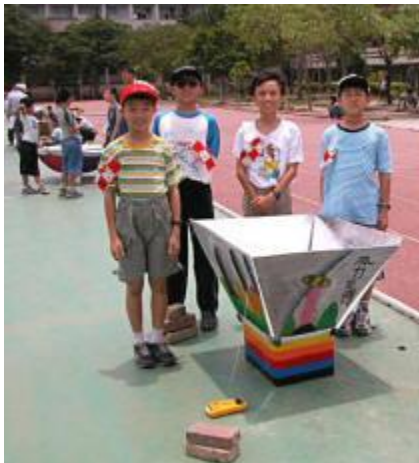
Karen Burt in honor of Wayne Wallace
Karen Burt in honor of Shiva and Shakti Butler
Karen Burt in honor of Robert and Lillian Burt
Pete Phillips in honor of his sister, Penny Harris
Jill De La Hunt in honor of Mike and Robin De La Hunt (and Michael, Ian, Chloe and Emily)
Sara R. Heckscher in honor of her sister-in-law, Abigail Barber
Doug and Kathy De Palma in memory of Ray Brodie
A special tribute was received from Judy Crowell in memory of a 17-year-old student of hers, Robert Newman, who recently passed away. Robert had developed an interest in solar cookers while working on a class project, and had just finished designing his own solar cooker model that he hoped would benefit people in the developing world.

Major solar cooking study available for download

"State of the Art of Solar Cooking," a 232-page comprehensive review of the field by Dr. Barbara Knudson, is now available online. The monograph was commissioned by Solar Household Energy, Inc. This landmark research effort outlines the demand, origins and rationale for solar cooking, describes different kinds of solar promotion efforts, and catalogs where programs have occurred and where they haven't but are needed. The study concludes with a series of policy recommendations. A summary of Dr. Knudson's findings is available on the Internet at www.she-inc.org/article.php?id=36. The full document is available for download as a PDF file at www.she-inc.org/sam.pdf.

Solar cooking empowers kids in Taiwan

By Peter Morehead



Say "Taiwan," and most people think of high-tech products and burgeoning consumption. While this is accurate, something else is beginning to happen here as well. Taiwanese people are becoming aware of the unreliability of their energy sources, 97% of which are imported. This

has helped trigger a solar cooking education movement in Taiwan.

Earth Passengers - a nongovernmental organization based in Taipei - has five years of experience making and teaching about solar cookers. Last year, with support from the Taiwan Ministry of Education, Earth Passengers and local environmental group Homemakers' Alliance taught solar cooking principles to 500 elementary school students (ages 8-12 years) and held a solar cooker design competition.

After learning basic solar cooker principles, the students - who came from all across Taiwan - were divided into small teams and given four weeks to design and build their own solar cookers. They were encouraged to be creative and use recycled materials, resulting in unique cookers made of such materials as driftwood, old fish tanks, used CDs, umbrellas, woks, and mirrors.



Creativity flowed freely in the cooker design competition; the reflective body of this cooker is made from a series of panels that close in a fan-like fashion



Used CDs and interlocking foam mat tiles provide the structure for this student-designed solar cooker

The challenge of the competition was to solar cook a small amount of dried mung beans in three cups of water in three hours. While waiting for the beans to cook, each group was called onstage to proudly describe their design, building process, experimentation and cooperation within the group.

Although the cooking test proved difficult for many of the students' prototype cookers, about one-quarter of the cookers managed to cook the beans within the allotted time. Over half of the cooker designs would have successfully cooked the beans in a couple more hours.

It was amazing to see the students' excitement when they discovered that simple materials could be used to cook food under the sun. As one of the competition judges said, "It is inspiring to see this generation so keen about solar energy. They are aware of the environmental and energy problems. Solar cooking empowers them to act and find solutions. Solar cooking is a perfect foundation for learning about passive solar energy and applying heat and cooling principles in their own homes and schools."

Editor's note: Earth Passengers is currently writing a Chinese book about solar cooking, and planning to teach solar cooking at elementary schools on Orchid Island, home of T'ao indigenous people. Peter Morehead is a member of Earth Passengers and was a judge for the solar cooker competition. He can be contact by e-mail: earthpassengers@gmail.com.

Correction

In the November 2004 Solar Cooker Review article entitled "Insight from Vietnam's Solar Serve organization" we mistakenly left the "D" off the city name Da Nang. We regret the error.

Solar Cooker Review

Solar Cooker Review is published two or three times per year with the purpose of presenting solar cooking information from around the world.

Topics include solar cooker technology, dissemination strategies, educational materials, and cultural and social adaptations. From time to time we cover related topics such as women's issues, wood shortages, health, nutrition, air pollution, climatic changes, and the environment.

Solar Cooker Review is sent to those who contribute money or news about solar cooking projects. The suggested subscription price is US \$10/year. Single copies are sent free to select libraries and groups overseas.

We welcome reports and commentary related to solar cooking for possible inclusion. These may be edited for clarity or space. Please cite sources whenever possible. We will credit your contribution. Send contributions to Solar Cookers International, 1919 21st Street, Suite 101, Sacramento, California 95814-6827, USA. You may also send them by fax: (916) 455-4498 or e-mail: info@solarcookers.org.

Solar Cooker Review is compiled and edited by the staff of Solar Cookers International (SCI), with layout graciously provided by **IMPACT Publications** located in Medford, Oregon, USA.

Back issues are available at <http://solarcooking.org/docs.htm#backissues>.

SCI is a 501(c)(3) nonprofit organization assisting communities to use the power of the sun to cook food and pasteurize water for the benefit of people and environments. We do not sell, rent or trade names of our donors. Tax ID # 68-0153141.