

# HISTORY OF SOLAR COOKING → July 1987

**1200s** → People have sun-dried fruits, vegetables, fish and meats for eight centuries to preserve them

**1600s** A German physicist, E.W. von **Tschirnhausen**, made large lenses to boil water in a clay pot. This was first reported in the first-published study of solar cookers in 1767 by French-Swiss scientist Horace de **Saussure** (Halacy, p. 3)

**1767** Saussure's was the first recorded effort to solar cook food. He built a miniature greenhouse with 5 layers of glass boxes turned upside down on a black table and reported cooking fruit. He later built a cooker of 2 pine boxes topped with 3 layers of glass, and later still added wool insulation between the two boxes. He predicted, "Someday some usefulness might be drawn from this device ...(for it) is actually quite small, inexpensive, (and) easy to make" (Saussure, pp 55,59). French contemporary, DuCarlu, added mirrors and reported cooking meat in one hour (Halacy, 1992, p. 3).

**1830** English astronomer Sir John **Herschell** cooked food in a similar insulated box on an expedition to South Africa

**1860s and 70s** Augustin **Mouchot** was the first to combine the box/oven heat trap and burning mirrors concepts to create a solar oven, a solar still, a solar pump and ultimately the first solar steam engine. He saw great commercial potential in France's sun-rich, fuel-poor colonies in North Africa and Asia. In 1877 Mouchot devised solar cookers for French soldiers in Algeria, including a shiny metal cone, made from a 105.5° section of a circle. He baked bread in 3 hours, built a separate cooker to steam vegetables, tried shishkabobs in a parabolic cooker and also wrote the first book on *Solar Energy and its Industrial Applications*. He also pasteurized water and wine, and worked on a solar device to break down water to hydrogen and oxygen. When improved coal transport and better political relations with England restored France's source of coal, interest in solar energy waned and a discouraged Mouchot went back to teaching math. (Butti & Perlin, pp 66, 70-73; Narayanaswamy 2001, p. 93; Halacy, 1992, p. 3).

**1876** In India W. **Adams** developed an octagonal oven with 8 mirrors which cooked rations for 7 soldiers in 2 hours (Narayanaswamy, 2001, p. 72).

Dr. Charles G. **Abbot**, Secretary of the American Smithsonian Institution, was the first recorded inventor of solar cookers in which the heat collector was outside in the sun but the cooker itself was in the house, with heat carried from collector to cooker by circulating oil. This solar boiler's stored heat allowed cooking in the evening.

**1884** Another Smithsonian scientist, Dr. Samuel P. **Langley**, solar cooked meals atop Mt. Whitney in California (Halacy, p. 4).

**1891** Clarence **Kemp**, 'father of solar energy in the USA,' patented a solar water heater that enjoyed broad popularity, especially in California. Nearly 30% of houses in Pasadena had solar water heating systems by 1897. This industry declined during WWII when copper, a key material, was heavily rationed (Sklar & Sheinkopf, 1995).

**1894** Xiao's Duck Shop in Sichuan, China, roasted ducks by solar cooking (Wang, X., 1992, p. 12).

**1930s** France sent many solar cookers to its colonies in Africa. India began to investigate solar energy as a substitute for dwindling wood and depletion of soil from burning crop residues and dung (Halacy, p. 4).

**1940s – 70s** Dr. Maria **Telkes** in the USA researched several combination types of solar cookers, including some with heat retention chemicals (Halacy, P. 4) and published a book, *Solar Ovens*, in 1968 (Hoda, 1981, p. 5).

**1945** Indian pioneer Sri M. K. **Ghosh** designed the first solar box cooker to be commercially produced (Hoda, p. 5).

**1950s** Water heaters were popular in Florida until electricity rates fell with plentiful, government-subsidized energy, and consumers were urged to use more and more (Sklar & Sheinkopf, 1995).

Indian scientists in government laboratories designed and manufactured commercial solar ovens and solar reflectors, but they weren't readily accepted, partly because there were still lower-cost alternatives.

Farrington **Daniels** and George **Löf** at the U. of Wisconsin, USA, introduced concentrator cookers in northern Mexico, with some acceptance, and Tom **Lawand** et al, Brace Research Institute at McGill U., Canada, tested steam cookers in several developing countries, but in these areas, too, there were still lower-cost alternatives for households. (Halacy, p. 4).

**1955** The International Solar Energy Society began as the Association for Applied Solar Energy, whose first conference in Phoenix, AZ, USA, included many practical solar cookers. By then the technical basics of solar cooking were known. Exhibited solar cookers included parabolics by J.L. **Ghai** of India, Georg O.G. **Löf** (US), Adnan **Tarcici** (Lebanon) and S. **Goto** (Japan) and box cookers by Maria **Telkes** (US) and Freddy **Ba Hli** (Burma)

**1959** The U. N. Food and Agriculture Organization (FAO) measured water-heating capacities of a parabolic cooker and an oven type cooker (Löf, 1963, p. 132).

**1960s** The U.N. tried a few pilot projects with a variety of elaborate devices designed by engineers with little or no attention to consumer needs, then blamed 'resistance to change' for lack of immediate intensive use.

**1961** A United Nations Conference on New Sources of Energy included many solar cooker pioneers, including Telkes, Löf, Duffie, Pruta and Abu-Hussein.

**1970s** Spreading deforestation prompted research and promotion of solar cooking by governments of China and India. A petroleum shortage temporarily created new interest in renewable energy worldwide.

**1973** **Barbara Kerr**, USA, built many types of concentrator and box type solar cookers from descriptions, including Ghosh's box cooker in India. She used simplest materials inspired by retained heat cookers ('hay boxes') and developed low-cost, simple solar cookers using recycled materials and aluminum foil. She worked with Bob **Larson** through People united for Self-Help to share these simple solar tools with homeless and low-income neighborhoods.

**1976** **Kerr** and her neighbor, Sherry **Cole**, cooked 2 meals per day for 40 people for two weeks for a women's conference. Kerr, an RN with a Masters in social work also did extensive pioneer work on solar food dryers, sanitizers and sterilizers and through-the-wall solar cookers.

**1978** Kerr and Cole began small-scale production and promotion of cookers and plans for people to make their own.

Prof. Bob **Metcalf** learned about Kerr-Cole cookers through Fred **Barrett**, USDA, bought one, and immediately became a regular user and began research on their germ-killing capacities. He quickly became a promoter of solar cookers both in the Sacramento area and beyond, teaching many in Sacramento including Thais **Thomas** who in turn taught Clark and Eleanor **Shimeall** (who wrote a still-popular cookbook). **Bob Larson** was giving workshops on building solar water heaters.

**1979** The Organization of African Unity held the 1<sup>st</sup> of 7 sessions on New, Renewable and Solar Energies. The most recent was in 2000 in Dar es Salaam, Tanzania.

**Dr. Metcalf**, with student **Marshall Longvin** documented water pasteurization in solar box cookers.

### 1980s

- \* The governments of India and China expanded national promotion of box cookers and curved concentrators respectively.
- \* Brace Research Institute, McGill U., Canada, researched and field tested solar cookers
- \* **Prof. Shyam S. Nandwani** in Costa Rica researched solar cookers
- \* **Tudor Roberts** in Zimbabwe taught his students about a variety of solar cookers he himself made and used.
- \* Box cookers were distributed to 20,000 Afghan refugees in Pakistan by SERVE (Serving emergency Relief and Vocational Enterprises). Types included hole-in-ground cookers.
- \* 1<sup>st</sup> major media in U.S.: '81 the national Christian Science Monitor newspaper featured **Bob Metcalf**.
- \* **Heather Gurley Larson** wrote first U.S. solar cookbook, *Solar Cooking Naturally*, in '83.
- \* **Metcalf** and **Fred Barrett** at USDA designed prototypes of the WAPI. In '84 Metcalf published his 1<sup>st</sup> solar water pasteurizing article, and in '85 his 9-page instructions for building solar box cookers.
- \* ULOG was started by **Ulrich** and **Lisel Oehler** to promote box and parabolic cookers in many countries.
- \* **Bill** and **Thelma Rogers** began weekly workshops for people to build their own solar cookers in a West Sacramento senior center. These continued for about 10 years.
- \* With **Kerr-Cole** instructions, solar cookers were built in Kitui, Kenya in '85

**1986** The U.N. Food and Agriculture Organization estimated that ¼ of humanity suffers fuelwood shortages and predicted that by 2000 scarcities would affect ½. **Eleanor** and **Clark Shimeall** taught **Bev Blum** to make cookers and suggested that someone should share this know-how with women in fuel-scarce parts of the world.

**1987** **Bob Metcalf**, **Bill Sperber** and **Aaron Zazueta** introduced solar cookers in the Bolivian Altiplano to Aymaran Indians, through Meals for Millions and sponsored by Pillsbury Company. This was the first of many, many trips by Bob (see list below)

Bev met with **Barbara Kerr** and **Sherry Cole** in AZ, and, with **Dr. Anne Funkhouser**, met **Bob Metcalf** and drafted a case for creating an organization about the same time **Dave Martin** independently contacted Kerr and Cole about promoting solar cookers in underdeveloped areas.

### SOLAR (BOX) COOKERS INTERNATIONAL'S FIRST 13 YEARS IN A NUTSHELL followed by yearly highlights 1987- 1993

#### Solar Box Cookers International

Focused on Sacramento and Latin America

1<sup>st</sup> international Conference and 2 Latin America region conferences

1<sup>st</sup> newsletters, educational tools, leaders guides

- 1<sup>st</sup> query-response and info-exchange to pool experiences from hundreds of independent promoters
- 1<sup>st</sup> field projects (3 years) in Belize and Honduras
- 1<sup>st</sup> field evaluations and surveys in 7 countries, revealing similar uptake and fuel savings in diverse settings
- 2 cardboard box cookers variations mass produced – ‘Joe On’ and Foldable Kits
- 2 water-resistant ‘fluteboard’ box models tested in 4 countries
- 1<sup>st</sup> WAPIs (water pasteurization indicators)
- Name change in 1993

## 1994 - 1999

### Solar Cookers International

- Shift focus to Africa and longer-term field projects
- Developed and mass produced CookKits in 3 countries
- 1<sup>st</sup> refugee projects – partnering with UNHCR, German GTZ and Luth. World Fed.
- 1<sup>st</sup> micro-enterprise projects – partnering in Zimbabwe with UNESCO, gov’t. Energy Ministry and U. of Zimbabwe Dev. Tech. Center and in Kenya with Nyakach Community Development Association (NYACODA)
- 1<sup>st</sup> independent evaluations documenting fuel savings, acceptance and usefulness, and effectiveness of SCI participative introduction strategies
- 2 more international conferences, 3 more regional conferences, 2 regional networks – Kenya – KESONET (became SOLARNET) & Latin America (RECOSOL)
- 1<sup>st</sup> website – created and maintained to this day by Tom Sponheim

**§(B)CI’; YEARLY HIGHLIGHTS** are sorted by

**Organization milestones**

**Major event;**

**Education tools, services & publicity**

**Major field projects;**

**Independent event;**

# **SBCI HIGHLIGHTS OF 1987, starting July 11**

\* **1<sup>st</sup> MEETINGS:** Two meetings to create **Solar Box Cookers International** were held at the U. of the Pacific, Stockton, CA, the first on July 11, 1987, the day the world's population reached 5 billion.

\* **FOUNDERS and FOUNDING BOARD 1987:**

1<sup>st</sup> meeting: 16 Founders attended

Dr. Joseph **Arnaboldi**

Barbara **Blum**

Bev **Blum**

Georgianna **Borgens** Wanjiru

Sherry **Cole**

Dr. Anne **Funkhouser**

Barbara **Kerr**, Dave **Martin**

Don **Mahlberg**

Dr. O. Boyd **Mathias**

Dr. Bob **Metcalf**

John **Murphy**

Blaine **Pack**

Margaret **Payne**

Clark and Eleanor **Shimmeal**

2<sup>nd</sup> and 3<sup>rd</sup> meetings:

Carmen and Dr. Edwin **Pejack**

Terry **Snyder**, Atty.

Sheri **Lewis**

\*This group drafted 2-year goals and plan and 3-year proposed budget, adopted the 1<sup>st</sup> By-laws and applied for nonprofit, tax-exempt status.

\*The **1<sup>st</sup> 'OFFICE** was half a room at 1823 11<sup>th</sup> St., Sacramento, for \$100/mo. with an 8' table, 4 folding chairs and access to phone, copier and fax, thanks to Mike **Eaton**.

\* The **1<sup>st</sup> DONORS** came from the 1<sup>st</sup> fund-raising mailing to Kerr-Cole customers and lists gathered by Georgiana **Borgens**.

\* **1<sup>st</sup> VOLUNTEERS** besides the Founders included Lois **Schwarze** and Don **Coan**.

## **EDUCATION TOOLS, SERVICES, PUBLICITY**

\* **1<sup>st</sup> BROCHURE** was produced by volunteers A. **Funkhouser** and G. **Wanjiru** (Borgens). D. **Martin** and J. **Murphy** drafted strategies for marketing and project site selections.

\* **1<sup>st</sup> SURVEY** gathered feedback from Kerr-Cole box cooker buyers (O Boyd **Mathias**)

\* **1<sup>st</sup> VIDEO:** Fred **Barrett** of USDA funded production of Bob **Metcalf's** *4 Square Feet of Sunshine* video.

**INDEPENDENT NEWS:** Bob **Metcalf**, Bill **Sperber** (Pillsbury Co.) and Aaron **Zazueta** (Meals for Millions) introduced solar cooking to Aymara Indians in the Bolivian Altiplano. Eleanor **Shimeall's** Solar Cookbook was first published.

# HIGHLIGHTS OF 1988

- \* **1<sup>st</sup> ELECTED BOARD** was comprised of 9 Founders, each with a specific title and tasks.
- \* **1<sup>st</sup> President** Bev **Blum**
- \* **1<sup>st</sup> ACTION PLAN** included multilingual ed. materials, demos to international 'nongovernmental organizations' (INGOs) in the U.S. and elsewhere.
- \* Officially **incorporated** with federal and state tax exemption status.
- \* **1<sup>st</sup> VOLUNTEER OF THE YEAR:** Lois **Schwarze**, honored as 1<sup>st</sup> volunteer office 'anchor' who oversaw response to 4000 orders for "How to Make and Use"
- \* **1<sup>st</sup> ANNUAL MEETING.**
- \* **253 CHARTER MEMBERS** by June 1988 (goal was 200)
- \* **REVENUES** \$48,458, including \$30,000 in-kind, expenses \$45,458.
- \* **1<sup>st</sup> GRANT:** \$8000 from Pillsbury for improved instructions, *How to Make and Use* booklet, for cookers and travel to '89 Pillsbury Conference.

## **EDUCATION TOOLS:** Volunteers produced and mailed

- \* **1<sup>st</sup> 3 newsletters,**
  - \* **1<sup>st</sup> SBCI 'plans'** – *How to Make and Use a Solar Box Cooker*, sent in response to Christian Sci. Monitor feature on Bob **Metcalf**
- \* New **brochure** by Anne **Funkhouser**,
- \* **Spanish materials,**
- \* **Mini-boxes**
- \* **Tyvec patterns** for cardboard box cookers

## **SERVICES**

- \* **1<sup>st</sup> training of trainers** for Sacramento area people, 26 businessmen from Dominican Republic including Malaquias **Santana** and 9 Humphreys Fellows including Rev. Kontsante **Modisenyane** from South Africa.
- \* **4000 requests** for 'How to make a solar box cooker,' from a Christian Science Monitor feature of **Metcalf** were filled by a handful of volunteers coordinated by Lois **Schwarze** and Dave **Martin** (often peeling stamps off too-small self-addressed envelopes and re-addressing larger ones).
- \* **1<sup>st</sup> international info-exchange** with promoters worldwide.
- \* **1<sup>st</sup> training to include water pasteurizing (Metcalf** and John **Murphy** in Baja, **Mexico**). SBCI also sent 10 Eco-cookers to La Piedad, Mexico, with volunteer trainers **Metcalf**, Mary **Brewer**, Rick **Blodgett** and Robb **Robel**.

**PUBLICITY:** The Sacramento Union featured Bill and Thelma **Rogers** and brought 100 info requests; Barbara **Jodry** authored an article in a Sacto. paper; Mary **Brewer** was on local TV about Mexico trip; Bob **Metcalf** spoke and Dave **Martin** exhibited at the RETSIE Global Energy Society Conf. on Energy for Africa, Santa Clara, CA; **Metcalf** was interviewed on UN radio and Saudi Gazette.

## INDEPENDENT NEWS:

- \* Bob **Metcalf's 1st training that included hands-on making of cookers** was with Plan International and the Kerr-type box cooker in **Guatemala**. A follow-up visit months later found 57 families solar cooking regularly. As a UN consultant he trained with Dr. Hannah **Daoud** of UNFAO in **Djibouti** and for World Food Day in Italy.
- \* Other: SBCI trainee in South Africa, Rev. Kotsante **Modisenyane**, translated "How to –" into several dialects and introduced in South Africa, Botswana and Lesotho. Many church missions in Haiti including Founder **Arnaboldi's** with Heifer International. D. **Martin** took 2 cookers to TOOL in Netherlands and Schweitzer Ecol Center, Switzerland for Burkina Faso. A 3rd solar cookbook by **Halacy** appeared.

## HIGHLIGHTS OF 1989

- \* **President Dave Martin**
- \* **1<sup>st</sup> REAL OFFICE** at 1724 11<sup>th</sup> St., Sacramento for \$750/mo.
- \* **1<sup>st</sup> PAID STAFF:** Bev **Blum** volunteered 6 months as a part-time Director, then was hired as a part-time Exec. Director. G. **Borgens** (Wanjiru) was 1<sup>st</sup> part-time assistant
- \* **1<sup>st</sup> THINK TANK** led by Aaron **Zazueta** (Freedom from Hunger), Ray **Sylvester** (U. of Pacific) and Bill **Sperber** (Pillsbury) and **1<sup>st</sup> BOARD RETREAT** produced a **1<sup>st</sup> statement of principles** and a **10-year Plan** and **goal to reach 2.4 billion people with info by 2000.**
- \* Don **Coan** was 1989 Volunteer of the Year for his endless office work, workshops and demos as well as his own work in Central America.
- \* **REVENUES:** \$92,466 including \$15,820 in-kind (goal \$70,000) and expenses \$80,542.
- \* **2<sup>nd</sup> GRANT:** \$20,000 from W. Alton Jones Foundation. The Lutheran Bible School in Hershey, PA, donated \$470 so we sent solar cookers to B. **Kinteh** in Gambia, MNES Kerala in India, Virgin Islands Environmental Group and Mexico Girl Scouts.

## MAJOR EVENTS

- \* **1<sup>st</sup> CONFERENCE** in DC on Strategies for Promoting Energy Efficient Cooking in Developing Countries, co-sponsored with Pillsbury (**Sperber +**), World Resources Inst. (Tom **Fox**), USAID and InterAction. Speakers included **Metcalf**, Barbara **Knudson**, Norge **Jerome**, Jessica **Matthews** (WRI) and Willem **Floor**, who represented persistent biases based on early solar cooker failures.

## EDUCATION TOOLS,

- \* Developed criteria for field projects site selection, time frames and budgets and began seeking partners.
- \* Ed **Pejack** and Paul **Mellersh** researched best 'found' materials for box insulations.

- \* **NEW PUBLICATIONS:** new brochures, a posters display with PVC pipe, the 1<sup>st</sup> Handbook, "How to" translated to Arabic,

### **SERVICES**

- \* **1<sup>st</sup> FIELD TRAINING WITH PARTNERS:** Dave **Martin** trained 200 in **Belize** through Belize Enterprise for Sustainable Technology (**BEST**) and **Katalysis**.
- \* **'HOW TO MAKE AND USE' WORKSHOP:** in Sacramento trained 200 from 27 countries
- \* **PROFESSIONAL NEWSLETTER** by volunteer Mark **Rothman** of IMPACT Publications, Oregon. His successor, Dave **Ruppe**, continues volunteering this service today.
- \* **INFO EXCHANGE:** Responded to 13,000 inquiries and added hundreds of independent promoters to our info-exchange network.

**PUBLICITY:** Worldwatch Magazine, OMNI Magazine, Sierra Club newsletter, ABC TV Home Show, exhibit at the Assoc. of Women in Development (AWID) Conference in DC.

### **INDEPENDENT NEWS:**

**Metcalf** researched Colilert water testing applications with solar pasteurization, trained U.S. EPA staff; traveled to **Sierra Leone** with Southern U. in Louisiana (Dr. Barbara **Carpenter**); also to **Zimbabwe** with Plan International and to **Egypt, both Yemens, and Somalia** with UNFAO (Hanna **Daoud**).

Tom **Sponheim** and Mark **Aalf**; formed **Solar Box Cookers Northwest**.

Barbara **Kerr** introduced solar cookers in Navajo nation;

**Blum** trained gov't nutritionists in **Lesotho** through Farmer-to-Farmer, Lapis/ USAID.

We learned of major projects in India and China.

Dr. Bill **Lankford**'s CASEP in Central America and **Creamers** in Nicaragua, where people crossed borders illegally to learn about solar cookers because of land mines in wood-gathering areas

## **HIGHLIGHTS OF 1990**

- \* **President Bob Metcalf**
- \* **GOAL REVISED:** by 2000 5% of 2.4 billion people, or **25 million household; would be using** solar cookers
- \* **GEOGRAPHIC FOCUS:** Sacramento, Mexico, Central America & Caribbean
- \* Revised Bylaws, adopted Personnel Policies and Nominating Committee guides and updated Advisory Board.
- \* **2nd Think Tank** and workshops– speakers: Norge **Jerome**, Davida **Coady**, Barby **Pulliam**, and Isaac **Ferguson**.
- \* **1990 VOLUNTEER OF THE YEAR:** Retired biology prof. Elinor **Benes** for countless office hours
- \* **New staff** (all part-time): Kevin (Ramon) **Coyle** for fundraising, Bonnie **Parmar** as receptionist, Paul **Barth** for research, Maria **Chacon** for translations, and **interns** Maria



**Gonzalez** (Joe On patterns), Rodil **San Mateo** (bibliography) and Kim **Victorine** (foldable box cooker production and assembly).

- \* **REVENUES:** \$175,178, including \$28,849 donations and \$35,270 in-kind, expenses \$153,827. Largest donation, \$1000 to send plans to 70 Peace Corps 'libraries' worldwide; 3 grants included a 3-year grant of \$150,000 from **Thrasher Research Foundation** (thanks to Rick **Blodgett** and Isaac **Ferguson**) to continue BEST's field project in Belize and start in Honduras and measure acceptance, **W. Alton Jones Foundation's** 2<sup>nd</sup> grant to SBCI - \$15,000, and \$20,000 from **Education Foundation** to produce foldable box cookers. We contracted with Asay & Farrimond (\$2000) who (unsuccessfully) sought grants for SBCI.

## **EDUCATION TOOLS**

- \* **A foldable, teaching model box cooker** was developed and mass produced
- \* improved **poster-style "How to —"**
- \* 60-page **Leaders Manual**, "Spreading Solar Cooking" (**Blum**)
- \* **Cutaway cookers** for construction workshops (**Mellersh**),
- \* **Slide sets** for speakers (**Metcalf**).
- \* **1<sup>st</sup> TRANSLATIONS** of "How to—" by volunteer into Chinese, Farsi and Sesotho
- \* **1<sup>st</sup> newsletter survey** gathered use info from 548 solar cooks.

## **SERVICES**

- \* **First email** info responses
- \* **Speakers Bureau** (Georgianna **Borgens** Wanjiru, Kofi **Kondwani**, Paul **Barth**, Rick **Blodgett**, Don **Coan**, Mary & Ted **Feldman**, Ila **Lewis**, Beth **Luna**, Dave **Martin**, Paul **Mellersh**, Bob **Metcalf**, Jeanne-Marie **Moore**, Irene & Roger **Smith**, Boyd **Mathias**, Bob **McAdams**, Randy **Smith**, Doran **Smout**, Phyllis **Woodbury**, Julius **Davis**, S. **Robinson**, Farlu **Kaufman**, Bev **Russell**) filled many speaking requests.
- \* **1<sup>st</sup> Sacramento Solarques**

## **PUBLICITY**

- \* **Metcalf** spoke at Global Forum on Environment and Development in Moscow; exhibited at Earthtech in DC with **Barrett** and other DC volunteers; was commended by Mayor Ann **Rudin** and the Sacramento City Council.
- \* Articles in *Solar Today*, *World Watch Inst.*, *New York Times*, *Times of London*, and a PGE bill insert on solar cookers, prompting thousands of info requests
- \* SBCI made first contacts with U.N. agencies UNDP, World Food Program, UNICEF, UN Evir. Program, UNIFEM, INSTRAW, DPI-NGOs, also USAID International Nutritionists Network Exchange (N. **Jerome**), Rwandan and Lesotho Embassies, and INGOs: CARE, New Forests Project, AfriCare, Int'l Women's Tribunal, PACT, Partners in the Americas, VITA, (**Blum** and **Metcalf**).

## **INDEPENDENT NEWS:**

**Metcalf** published a paper on microbiology of pasteurization

Barbara **Kerr** published her book, *Expanding World of Solar Box Cooker*.

T. **Sponheim** started SBC Northwest bimonthly Journal.

**Arnaboldi** continued work in Haiti with Heifer Int'l, J. Shumaker, World Christian Relief Fund & Peace Corps.

Avinashilingam U. researched solar cookers nutrients retention in India (Dr. **Devadas**);

Manila Women in Philippines (Leonarda **Camacho**) were active promoters;

Didi **Contractor** & GTZ's Indo-German Dhouladar Project in India was making large mud/bamboo patio ovens.

## HIGHLIGHTS OF 1991

\* **President Bob Metcalf**

\* **New STAFF** (all part-time): Veronica **Perez** for reception and bookkeeping, Aaron **DeRuntz** as volunteer coordinator; Intern Randy **Smith**, intern, compared cookers' performance.

\* **1991 VOLUNTEERS OF THE YEAR:** Irene **Smith** and Barbara **Jodry** for extensive organizing the first Solarbration and great publicity

\* **3<sup>rd</sup> Think Tank/4<sup>th</sup> Annual Meeting/Dinner** – Tom **Lawand** and SMUD's Donald **Freeman** were honored with Bright Future awards

\* Contest for **1<sup>st</sup> LOGO** – winner was Rick **Blodgett**'s son, \_\_\_.

\* **REVENUES:** \$254,362 (budget \$207,000), inc. \$97,907 in donations and in-kind; \$60,000 2<sup>nd</sup> year Thrasher Grant and \$20,000 from Rockefeller/Am. Cons. Fund/Children's Earth Fund project to upgrade ed. materials. Sought corporate donations.

### MAJOR EVENTS

\* **1<sup>st</sup> SOLARBRATION:** sponsors – SMUD, Syufy Theaters (promo briefs in theaters), Raley's; included Schools Day, Seniors Day, Service Day, Solarque at Coloma Community Center and Capitol Cook-Off; stores demos chair Jeanne-Marie **Moore**, libraries Julius **Davis**, Bob **Metcalf** & Pat **Mahlberg** on local TV.

\* Planning began for SBCI's 1<sup>st</sup> World Conference in 1992, hosted by Univ. of the Pacific (Ed **Pejack**)

### EDUCATION TOOLS

Revised "How to—" plans and Leaders Manual and translated to French, Spanish and Arabic

Created lesson plans and language-free flip charts,

Spanish version of *Bright Future* video;

Bibliography of published and unpublished papers (R. San Mateo);

'Multipliers' insert added to Newsletter

Sales included 18,000 Plans, 1000 Leaders Manuals, 650 Foldable cookers and 750 Joe **On** kits

1<sup>st</sup> WAPI mass production

Also bumper stickers, sun visors, t-shirts, buttons

### **SERVICES**

- \* **SHOWCASE SACRAMENTO** as a 'lab' for community promotion by volunteers Dave **Martin**, Henry & Ursula **Stanton**, Lee **Adair**, Anna **Ward**, Tom **DuHain**, Lori **Bodenhammer**
- \* The Speakers Bureau gave 236 public presentations and reached 5035 people;
- \* Workshops, teacher trainings, cookers loans and exhibits at other events targeted media, schools, libraries and low-income areas
- \* **Promoters info-exchange network** now included 300 groups and individuals worldwide; the 20 top solar cooker promoter agencies were all in Asia.

### **PUBLICITY**

- \* **Metcalf** attended Geneva UNEP and Children's Earth Fund meetings, sponsored by American Conservation Association (Larry **Rockefeller**)
- \* North-South Connection (**Snelgrove**), connected Board Member Margot **Aguilar** in Mexico with Latin businesses.

**LATIN AMERICAN FIELD PROJECT** (Thrasher Foundation) began in Belize and Honduras with 3 partners: **Katalysis** (Jerry **Hildebrand** & Karie **Brown**), Belize Enterprise for Sustained Technology (**B.E.S.T.**, Carlos **Santos**) and Organizacion de Desarrollo Empresarial Femenino (**O.D.E.F.**, a women's village banking program in San Pedro Sula, Honduras).

### **INDEPENDENT NEWS:**

**Metcalf** visited Sierra Leone for a 2-year follow-up and found 4/5 say food tastes better and want to own solar cookers; as a UN Sudano-Sahel consultant he provided training in Burkina Faso, Mali and Mauritania. Germany's Natur Magazine pictured **Metcalf** on its cover among 100 most important men in the world's future.

Kiwanis built 30 cookers to celebrate 30 years; NorCal Boy Scouts built teaching kits for BYOBox workshops.

Paul **Funk** helped develop basket and woven solar cookers in Tanzania

Sacramento Municipal Utility District (SMUD) produced and distributed solar cook books to its customers and sponsored promotion in schools thanks to Harvey **Greer**;

## **HIGHLIGHTS OF 1992**

- \* **President Bob Metcalf**
- \* **5-year Celebration**
- \* **1992 VOLUNTEER OF THE YEAR:** Jeanne-Marie **Moore** for leadership organizing Solarbration and for extensive office work and trainings for blind. Blind herself, she inspires us all.

- \* **Award** from Die Twaalf Ambachten, Netherlands, through Gerri **de Graaf** & Dave **Martin**
- \* Children's Earth Fund/SBCI's proposal for international schools exchanges about solar cooking led only briefly to SBCI's inclusion in **Gorbachov's** new Green Cross plans
- \* An extensive grant proposal for training in Sahel countries was developed with UNDP/GEF staff after great encouragement from them, but was rejected by higher policy makers.
- \* **Revenues:**

## MAJOR EVENTS

- \* **1<sup>st</sup> INTERNATIONAL CONFERENCE** held at Univ. of Pacific, Stockton, CA, USA brought 150 from 18 countries. Waafas **Ofoşu Amaah** and Karim **Ahmed** were featured speakers
- \* **2<sup>nd</sup> SOLARBRATION** immediately followed the Conference and included 2<sup>nd</sup> Solar Cook-out on the State Capitol lawn; Irene & Roger **Smith** videoed.
- \* **The SBCI exhibit at the Global Forum** at the **Rio Environmental Summit** in Brazil, was very popular, staffed 11 hours a day for 12 days by Bob **Metcalf**, Don **Coan**, Barbara **Jodry**, Barbara **Knudson**, Bob **Larson**, May **d'Marie**. We produced brochures in Portuguese, Spanish and French.

## EDUCATION TOOLS:

- \* **1<sup>st</sup> CONFERENCE PROCEEDINGS** (Ed **Pejack**)
- \* Newsletters, 6<sup>th</sup> edition of '*How to—*'; a poster annual report
- \* For **foldable cookers**, a switch from cardboard to metal trays and final production. Pride Industries took over assembly and mailing.
- \* **SURVEY OF PROMOTERS** through the newsletter, 58 respondees described needs and promotion strategies

## SERVICES

- \* Began dialog with UNESCO Science chief Boris **Berkovski**, who requested info via Roma **Stibravy**, considering solar cookers for the U.N. World Solar Summit" (see 1996).

## PUBLICITY

- \* UNEP Women's Conf. in Florida solar cooker leaders from 6 countries thanks to AWID's Waafas **Ofoşu-Amaah**: Didi **Contractor** (India), Vilma Soto (Costa Rica), Claudett Wilmot (Jamaica), also Fitri **Aini** (Indonesia), Nandini **Gandhi** (India), Leonarda **Camacho** (Philippines), Barbara **Knudson** and Bev **Blum**, USA. SBCI brought them together for a breakfast meeting.
- \* Presentation at World Resources Institute (WRI) (B. **Metcalf**, B. **Blum**, K. **Ahmed**)
- \* Articles in Audubon Magazine, International Rotarian, San Francisco Examiner

## LONG-TERM FIELD PROJECTS

- \* Thrasher Project year two in Belize and Honduras included multiple workshops and demos and surveys. Edie **Farwell** trained surveyors; Karie **Brown** coordinated for Katalysis. With smaller surveys by contract in Zimbabwe, Ecuador, Chile, and Guatemala, 800 surveys from 7 countries confirmed acceptance, high satisfaction and consistent, gradual use increase over the 1<sup>st</sup> 3 years.

## INDEPENDENT NEWS:

**Metcalf** trained volunteers from 7 countries in Kenya for Trickle Up and African Medical Relief Fund (AMREF).

Dan **Kammen** conducted an Earthwatch Project in Kenya.

Barby **Pulliam** actively trained Girl Guides worldwide and developed many excellent training methods and tools.

# HIGHLIGHTS OF 1993

- \* **President Bob Metcalf**
- \* **NAME CHANGE** – dropped 'Box' from name after much Board debate, becoming **Solar Cookers International**
- \* **1993 VOLUNTEER OF THE YEAR:** Randy **Smith** honored at 6<sup>th</sup> Annual Dinner
- \* **ENDOWMENT** gift of \$25,000 in memory of Mary **Euwer** by daughters Eleanor **Shimeall** and Ellie **Norton**
- \* **65 organizational members**
- \* **1<sup>st</sup> consultative status with U.N.**
- \* **REVENUES:** \$248,700, incl. \$111,531 in donations and in-kind, \$63,500 grant (Thrasher). Launched an Africa Fund Campaign for future projects in Africa.

## MAJOR EVENTS

- \* **1<sup>st</sup> LATIN AMERICAN CONFERENCE** in Honduras (Thrasher, co-sponsor UNESCO), hosted by ODEF gathered 90 leaders from 14 countries
- \* **1<sup>st</sup> LATIN AMERICAN NETWORK**, Red Cosinas Solares (RECOSOL) was formed under leadership of Pedro **Serrano**, Chile
- \* Planning began for 2<sup>nd</sup> Int'l Conference in '94 in Costa Rica, hosted by Shyam **Nandwani**.

## EDUCATION TOOLS

- \* **1<sup>st</sup> International Directory** of 500 solar cooker experts
- \* *Fun with the Sun* **Teachers Guide** (B. **Larson** & Heather **Gurley**) and Spanish translation, \* Teachers Kit, sun visors, aprons, and 7<sup>th</sup> edition of 'How to—' plans
- \* **Field survey:** results were analyzed and *Trends in Solar Cooking* summarized 100+ promoters' experience.
- \* Assembly of box cooker lids was outsourced.
- \* Field tests of **moisture-resistant cookers** in Chile, Ecuador, Belize & Honduras concluded Thrasher Project (below). Tested were J. **Campbell's** 'Bluebird Box' and P. Funk's slant box with no reflector. Both were satisfactory but considered expensive (\$20, 40 respectively if mass produced).

## **PUBLICITY**

- \* **California State Fair** booth co-sponsored by SMUD, dozens of volunteers for 10 days and coordinated by **Metcalf**.
- \* Earth Fund and Nickelodeon sponsored a **Kids World Council** at Disneyworld. Bob **Larson**, Virginia Heather **Gurley**, Don **Coan** & Barbara **Jodry** tried to solar cook lasagna for 80 in iffy weather. Al **Gore** admired a solar cooker, and afterwards SCI corresponded with 27 schools in 15 countries.
- \* The **Interdisciplinary Congress on Women** in Costa Rica included SCI exhibit and presentations (B. **Knudson**, B. **Blum**)
- \* **Smithsonian Natural History Museum** featured solar cookers.

## **LONG-TERM FIELD PROJECTS**

The Thrasher Project ended in Belize and Honduras with final Thrasher surveys, cooker field tests, 1<sup>st</sup> Latin Conference and final report concluding that Central American climates are often sub-optimum for solar cooking and fuel shortages are not yet acute.

## **INDEPENDENT NEWS**

- \* **Metcalf** trained Trickle Up volunteers in Nepal from 10 Asian countries
- \* The European Committee for Solar Cooking Research conducted large **comparative performance tests** of many solar cookers, repeating in 1995.
- \* **Villa Seca Solar Village** in Chile now attracts tourists with its 200 solar-cooking households, a solar restaurant and solar bakery (**Guzman**, **Serrano**)
- \* Allart **Ligtenberg** started Nepal projects
- \* PC Barbara **Ross** trained Amagoro Women's Group including future SCI trainers Faustine **Odaba** and Everlyne **Juma**

# **HIGHLIGHTS OF 1994**

## **President Clark Shimeall**

- \* **1994 VOLUNTEER OF THE YEAR** Mary **Frank**, distinguished artist and tireless advocate solar cooks on the roof of her NY loft and has recruited many NY donors and volunteers.
- \* Board Policies updated to add short-term strategies to temporarily conduct 5-10 multi-year field projects to achieve and thoroughly document self-sustainability to gain evidence needed to persuade policy makers, and **Kenya** chosen for 1<sup>st</sup> African project.
- \* **REVENUES**: \$216,694 with \$151,485 donations, including **African Fund Campaign** which matched \$20,000 Setzer Grant with \$36,480 donations

## **SCI major Events**

- \* **2<sup>nd</sup> WORLD CONFERENCE**, hosted by Dr. Shyam **Nandwani** at Universidad Nacional, Heredia, Costa Rica

- \* **1<sup>st</sup> KENYA CONFERENCE**, hosted by Kenya Girl Guides (Honorine **Kiplegat**, Wamuyu **Wachiru**), followed by a teachers' workshop (below) and a meeting with Kenyan NGOs

## EDUCATION TOOLS

- \* **Cookit** prototype invented by Roger **Bernard**, France, and Barbara **Kerr** added plastic bag in place of glass bowl. She quickly called, saying, "My pot of beans boiled over, making a big mess. This really cooks!" Refinements by J. **Campbell**, E. **Pejack**, B. Blum and others led to the mass-produced **Cookit**, at last a realistic tool for the world's poorest families.
- \* 8<sup>th</sup> Edition of "How to" Plans, revised to add Cookit
- \* International Directory of solar cooker promoters produced.

## SERVICES

- \* 1<sup>st</sup> Kenyan **teachers' workshop** hosted by Trans World Radio (Clive **Wafuko**)
- \* 20 cookers sent to overseas schools through **Children's Earth Fund** (Annie **Brody**, L. **Rockefeller**)
- \* 1<sup>st</sup> UNESCO contact re solar cookers for the World Solar Summit by Sci Dir. Boris **Berkovski**
- \* **1<sup>st</sup> Kenyan network (KESONET)** formed with **Kenyan solar cooker-promoting agencies**, Inst. for Cultural Affairs (Elizabeth **Castiglioni**), TransWorld Radio (Clive **Wafuko**) and Kenyatta University (Peter **Kariuki**). KESONET later evolved into SOLARNET, dominated by solar photovoltaics organizations.

## PUBLICITY

- \* 2<sup>nd</sup> **California State Fair** exhibit with SMUD with dozens of volunteers.

## LONG-TERM FIELD PROJECTS

- \* **KENYA:** Board members Barbara **Knudson** and Norge **Jerome** explored partnerships and gathered advice from many Kenyan agencies. Lutheran World Federation (LWF) agreed to let SCI test Cookit usefulness and durability in **Kakuma Refugee Camp**. Knudson visited the camp to prepare for a 1995 launch.

# HIGHLIGHTS OF 1995

## President Clark **Shimeall**

- \* Planning started for 3<sup>rd</sup> International conference in Coimbatore, India, 1997, invited by Vice Chancellor Rajammal **Devadas** of Avinashalingam Deemed U.
- \* **1995 VOLUNTEER OF THE YEAR:** Roger **Bernard** (France) retired professor. He invented the 1<sup>st</sup> 'panel' cooker that SCI volunteers evolved into SCI's Cookit
- \* **ORDER OF EXCELLENCE** was created to honor Barbara **Kerr** and Sherry **Cole**.
- \* **REVENUES:** \$284,821; \$185,400 in donations from 1200 members included Doug **Augustine's** gift of \$50,000 and Barbara **Kerr's** \$45,000 property deed gift matched with \$65,000 in other donations for the Sherry Cole Fund; \$75,000 total in grants from

Atkinson, Cottonwood, Latter Day Saints Humanitarian Fund, Setzer and the Jules and Doris Stein Foundations; sales revenues \$17,548; expenses \$228,689.

## EVENTS

- \* **2<sup>nd</sup> KENYA CONFERENCE**, held in Kakamega, hosted by RETEC Energy Center (David **Osotsi**); 55 attendees included 3 refugees and 1 staff from Kakuma Camp. Two teachers workshops organized by Osotsi and James **Mindo** trained 89 teachers.

## EDUCATION TOOLS

- \* CookKit mass produced in Kenya (Pressmasters). These lasted 2 years on average.
- \* **1<sup>st</sup> Solar Cooker Review**, from merger of *SBC Northwest Journal* (**Sponheim**) and *SCI's Newsletter*, circ. 7000 in 140 countries.
- \* 9<sup>th</sup> edition of "How to—"
- \* Checklist for predicting site-specific usefulness of solar cookers
- \* Improved teachers' training materials
- \* Tested Kenyan CookKits and plastic bags against US ones.

## SERVICES

- \* **1<sup>st</sup> solar cooker website** created by volunteer Tom **Sponheim**:  
[accessone.com/~sbcn/index.htm](http://accessone.com/~sbcn/index.htm)
- \* **RECOSOL**, the Latin Region Network, produced 6 Spanish newsletters and gave workshops in several countries (Pedro **Serrano**) with small, matching grant from SCI.
- \* **SOLARNET**, the Kenyan Network, produced several newsletters

## PUBLICITY

- \* Barbara **Knudson** and Kakuma refugee Gladys **Ngaruye** represented SCI at a U.N. Environmental Program meeting.
- \* **3<sup>rd</sup>/last Cal. State Fair booth** co-sponsored by SMUD, dozens of volunteers for 10 days and coordinated by **Metcalf**. Volunteer Randy Smith built a handsome display structure.
- \* Exhibit at NGO Forum on Women in Beijing (Barby **Pulliam** et al)
- \* Die Zeit, Germany, reported on the Kakuma project.

## LONG-TERM FIELD PROJECTS (See Field Project summaries for more details.)

### \* KENYA

**1<sup>st</sup> REFUGEE PROJECT** at Kakuma Camp in northwest Kenya began with Lutheran World Federation and UNHCR; B. **Knudson**, Jay **Campbell**, Faustine **Odaba** & B. **Blum** trained 70 refugee families and from these 16 refugee women became trainers, coordinated by refugee Gladys **Ngaruye**; 2000+ CookKits were distributed with training. Visits every few months by Knudson, Blum and Odaba found rapid uptake and usage.

**2<sup>nd</sup> REFUGEE PROJECT** at three Dadaab camps in eastern Kenya., at the urging of **UNHCR** and partnering with the German aid agency, GTZ, B. **Knudson** did a preparatory visit. Kakuma refugee Gladys **Ngaruye**, Bob **Metcalf**, and B. **Blum** trained GTZ stove trainers.



- \* UNHCR also offered a grant for a similar project in **ETHIOPIA**.
- \* UNESCO invited a proposal for 1000 CookKits and training for **ZIMBABWE** for the World Solar Forum in '96.

**INDEPENDENT NEWS** Linda **Hayward**'s Sacramento 5<sup>th</sup> grade class produced solar cakes weekly for a School Solar Cake Lottery that eventually reached all that school's classes.

## HIGHLIGHTS OF 1996

### President John Collentine

- \* **New office**, 1919 21<sup>st</sup> Street, Sacramento
- \* Staff grew to 4: Patt **Hull** and Dr. Mahnaz **Saremi** joined Blum and Coyle
- \* **1996 VOLUNTEER OF THE YEAR**: Louise **Meyer** for trainings in Ethiopia, Kenya, Zimbabwe and Istanbul as well as her own work in western Africa and advocacy in DC.
- \* Gained revised **consultative status with the U.N.**
- \* Joined InterAction and registered with USAID for possible fund-seeking
- \* Organized International (India) and Latin (Ecuador) Conferences for '97
- \* **REVENUES: \$366,571** including \$184,650 in donations with \$52,350 for Africa Fund, \$30,000 UNESCO grant for 1000 CookKits and training for Zimbabwe; UNHCR grant for Ethiopian refugee project

### EDUCATION TOOLS

#### \* **CookKits:**

**1<sup>st</sup> mass production** of wax-backed CookKits in Zimbabwe – lasted 3 years on average; Plastic laminate added to Kenya CookKits.  
Sales of U.S. foldable cookers was turned over to Michael Brown, but he ceased a year later.

- \* A new type of **WAPI**, SafWat, a bi-metal disk designed by Roland **Saye** and produced with Bean Foundation grant; a few rusted at the edges after long use, so we later discontinued sales, though they remain especially useful for vision-impaired.
- \* **Field Guide** for introducing solar cookers in Refugee Camps
- \* Improved Teachers Kit,
- \* **Video** of Kakuma and Dadaab projects, *Letters from Kenya*, featuring trainer Barbara **Knudson** and narrated by Wendy **vanden Heuvel**

### PUBLICITY

- \* **The UN World Solar Summit** in Zimbabwe featured exhibits and demonstrations by Zimbabwe solar cooker trainers from SCI's UNESCO project
- \* At the **U.N. Habitat II Conference** in Istanbul Louise **Meyer**, Deling **Wang** and B. **Blum** provided presentations, an exhibit, and contributions to an NGOs Statement on Household Energy.

\* Other publicity included Voice of America and Washington Post.

## **LONG-TERM FIELD PROJECTS**

- \* **ZIMBABWE:** The UNESCO project was planned by 30 Zim. agencies with SCI volunteers Virginie **Mitchem** and Linda **Helm Krapf** and B. Blum. UNESCO pledged 5 year's support and SCI partnered with Development Technical Center (DTC) at the U. of Zimbabwe (Tungamirai **Rukuni**), Zim. gov't Dept. of Energy (**Chigwada**) and Hlekweni Training Center (**Dube**). 7 U.S. volunteers (Patt **Hull**, Bob **Larson**, Bob **Metcalf**, John **Mitchem**, Ed **Pejack**, Mahnaz **Saremi**, Louise **Meyer**, Barby **Pulliam**), Faustine **Odaba** (Kenya) and 2 solar cooks from PLAN Mutare, Zim. (Mary **Chadambuka & \_\_\_**) trained 100 pilot families and 20 trainers in Ntabazinduna near Bulawayo and Epworth near Harare in time for the World Solar Summit.
- \* **KENYA:**
  - \* **SCI's 1<sup>st</sup> independent evaluation** in **Kakuma** by Musa **Njoka** found that 2/3 of families used 3x week on average.
  - In **DADAAB** Hundreds of families that had earned cookers by nurturing 20 trees for 3 months waited months for training and cookers because GTZ trainers were backlogged, so SCI paid for 16 more trainers chosen from Dadaab refugee enthusiastic solar cooks and Gladys **Ngaruye** trained them.
- \* **ETHIOPIA:** Jay **Campbell** and Louise **Meyer** made a preparatory trip to Aisha Refugee Camp in Ethiopia

## **HIGHLIGHTS OF 1997**

### **President John Collentine**

- \* **10<sup>th</sup> Anniversary celebration**
- \* **New staff** Kevin **Porter** as Office Manager and Virginia **Callaghan** as Development Coordinator
- \* **1997 VOLUNTEER OF THE YEAR:** Barby **Pulliam** for worldwide training of thousands of Girl Guides to teach their communities how to make and use solar cookers.
- \* **ORDER OF EXCELLENCE** honored Bob **Metcalf** for 2 decades of tireless education, research, promotion and worldwide training and consultation on solar cooking and water pasteurizing.
- \* **New logo** was donated by Brian **Collentine**
- \* Board Policies added priority target countries and various national standards for NGO fund-raising, publicity and programs. Annual Plans prioritized targets for advocacy: UNDP, UNICEF, UNIFEM, UNEP, CARE Int'l, and Int'l Rescue Committee.
- \* **REVENUES:** \$314,053; donations \$191,931; \$85,671 in grants from Compton, Alternative Gifts International, Rausing Family Trust and Stein foundations; and sales \$36,451

## Events

- \* **3<sup>rd</sup> INTERNATIONAL CONFERENCE**, Coimbatore, India, was hosted by Vice Chancellor Dr. Rajammal **Devadas**, Avinashilingam Deemed U. and drew 161 people from 6 continents
- \* **2<sup>nd</sup> LATIN AMERICAN CONFERENCE**, hosted by Prof. Rodrigo **Carpio**, Cuenca Ecuador, included 66 participants from 14 countries. Don **Coan** was 1 of 23 presenters.

## EDUCATION TOOLS

- \* **UNESCO** used **SCI's Case for Solar Cooking** as its basis for announcing a 5-year **U.N. World Solar Cooking Program, 1996-2005** was approved by the UN General Assembly in 1998. (The 'Program' began and ended with the Varese Conference in 1999).
- \* **Proceedings of the 3<sup>rd</sup> World Conference**, produced by Avinashilingam U.
- \* **List of 30 best countries** for solar cooking, based on climate, fuel scarcity, deforestation, population, etc.
- \* **SCI Field Guide**, including methods for periodic monitoring and evaluations.
- \* **Newsletter** *Solar Cooker Review* reaches 8000 supporters and promoters worldwide.
- \* Tested Ethiopian-made CookKits (not durable) and plastic bags (equal to Kenya's), and field tested possibly more durable plastic 'cuffs' – not useful.

## SERVICES

- \* Volunteer training for future field projects
- \* Provided 100 CookKits to Avinashilingam U. to field test for the Indian Ministry of Nonconventional Energies
- \* Responded to a large volume of individual correspondence and info-exchange
- \* Supported meeting of CASEP (Central American Solar Energy Programs)
- \* Participated in UNHCR Partners Conference on Environmental Management, Geneva.

## PUBLICITY

- \* SCI was one of 30 NGOs worldwide invited to exhibit at the U.N.'s Sustainable Development in Action Exhibit for the U.N. General Assembly GASS Rio +5' in NY. **Metcalf** spoke to Kofi Annan and wife and media, assisted by several NY-area volunteers.
- \* At a Micro-credit Summit in DC, Louise **Meyer** represented SCI.
- \* Media coverage included BBC, Osgood Files, Voice of America and Sacramento Bee, *Solar Today* magazine, and *International Rotarian*.

## LONG-TERM FIELD PROJECTS

### \* KENYA

**Kakuma Project** served 1500 more families despite LWF delays in supplies transport; 3-year CookKits are still useful and we hoped to finish but camp grew by 15,000 more refugees

**Dadaab Project:** The rest of SCI's 2000 promised CookKits were distributed with training, but major floods destroyed many of them, forced refugees to relocate, and cut off roads to the camps. Trainers trained 5000 families, but GTZ, our implementing partner,

provided only 400 additional CookKits due to budget problems and unexpectedly departed from the camp. This and a sudden decision by USAID to fund (inadequate) wood distribution for 3 years led SCI to suspend this project (temporarily, we hoped).

- \* **ETHIOPIA:** The **Aisha Refugee Project** started with UNHCR and ARRA (Ethiopian government refugee administrators) as partners. Trainers Faustine **Odaba**, volunteer Louise **Meyer** and B. **Blum** trained 50 pilot families, then **18** trainers were selected from the most enthusiastic solar cooks. This year 550 families began solar cooking and the local coordinator was UNHCR consultant Amina Ahmed. Mid-year, plastic bags were withheld for 6 months by an HCR staff, but HCR still proceeded with an evaluation before the 1<sup>st</sup> anniversary (see 1998).
- \* **ZIMBABWE:** UNESCO funds of \$100,000 disappeared in the Zim. government, but DTC continued with minimal support from SCI to fund a full-time coordinator, Rejoice. Rotary International and Bulawayo supported the Bulawayo part for several more years. About 500 more families began solar cooking this year, and several thousand in the following years.

## HIGHLIGHTS OF 1998

### President Norge Jerome

- \* **1<sup>st</sup> regional office:** SCI Eastern Africa, Nairobi, Kenya, staffed by Owino
  - \* **New staff:** Margaret **Owino** as Eastern Africa Director, Refugee Shadrack **Alumai** and non-refugee Virginia to coordinate Kakuma Program in Kenya, and Virginia **Callaghan** and Kevin **Porter** in the US as Fund Raiser and Office Manager respectively
- 1998 VOLUNTEER OF THE YEAR** was Barbara **Knudson**, for her extensive field work in SCI's projects in Kenya and Zimbabwe as pre-project negotiator, trainer, monitor and evaluator, as well as writings, presentations in addition to 6 years on the Board of Directors
- \* **REVENUES:** \$384,523 (budget \$348,000); included donations \$238,000 from 1700 donors; foundation support of \$106,376 from Alternative Gifts Int'l, Compton, Goldman, Greenville, New Earth, Rausing and Setzer. Friends of Founders Clark and Eleanor Shimeall donated \$23,700 to establish a Special Response Fund in their name. SCI now has 4 mo. operating reserve.

### PUBLICITY:

- \* A Cookit was featured in *Home Power Magazine* and by Cooper-Hewitt National Design Museum, NY, in its "Under the Sun: An Outdoor Exhibition of Light."

### LONG-TERM FIELD PROJECTS

- \* **KAKUMA:** 4400 CookKits distributed with training by 30 trainers – a 50% increase over previous year, bringing total to date to about 8000 but the camp added 15,000 more refugees from both Somalia and Sudan. B. **Knudson** & Bill **Lankford** measured fuel savings of ¼ - ½ -even though camp distribution was less than 1/3 of an amount needed to cook their meager rations. There were ongoing logistics difficulties in transporting supplies. LWF agreed to take over management and provide replacement supplies ongoing. When

that failed SCI added a non-refugee Kakuma staff, Virginia, to work with the 36 trainers and Shadrack and seek a partnership with GTZ's new tree-planting program.

- \* **AISHA:** Total Cookits distributed with training reached 2000. HCR's independent evaluation after 11 months found wide and frequent usage, high satisfaction and significant fuel savings, but criticized the extensive initial education required. HCR agreed that SCI could fund future follow up and efforts to initiate Ethiopian production of CookKits. SCI also presented full evidence that polyester bags are not toxic, but also taught refugees to recycle tattered bags into ropes, baskets, etc., and eventually burn them as clean fuel.
- \* Dr. Ed **Pejack** worked with trainers in Kakuma and Aisha toward possible local production with (almost nonexistent) local materials for replacements (average life of Kenyan CookKit – 2 to 3 years, in Zimbabwe – 3 years). Several possibilities were tried, but none suitable was found.
- \* **ZIMBABWE:** UNESCO discontinued funds to Zim. gov't. but DTC elected to continue the Epworth part while Rotary and Girl Guides continued the Bulawayo part.

**INDEPENDENT NEWS:** UNHCR conducted evaluations of solar cooking projects in Kenya, Ethiopia and Pakistan. David \_\_, private entrepreneur in the U.S. produced and sells flexible CookKits, 'Sun Toy.'

## HIGHLIGHTS OF 1999

### President Norge Jerome

- \* **Staff changes:** Exec. Director B. **Blum** retired in April. John **Collentine** served as interim, during which Bev completed a fiscal program transition, visited field projects and attended the UNESCO Varese Conference. Terry **Grumley** was hired in November. Nadir **Aden** became Aisha Program Director.
- \* Plans begin for non-refugee community projects in Kenya
- \* Honorary Advisors were updated

### EDUCATION TOOLS

#### SERVICES

- \* Both tube and bi-metal disk WAPIs were tested for long-term reliability by Barbara **Kerr**, Shyam **Nandwani** and Bob **Metcalf**. Neither rare tube cracks (due to extreme overheating?) or rust on disks reduced their safety (lowered their trigger temp), but SCI discontinued the discs.
- \* A 'State of SCI' report by Bev summarized trends and shifts in SCI's first 13 years. It noted that in all but the first refugee field project (Kakuma) we expected to play only a minor ongoing consultative role for our major partners, but soon identified the need for an array of support services not only for consumers and trainers, but for partner agencies themselves. We also noted that of 600+ known independent promoters, most reached only a few hundred families, and quit in disappointment before becoming self-sustaining, adding to widespread certainty that people won't use them.

### PUBLICITY

- \* UNESCO-sponsored international conference on solar cooking and food processing, Varese, Italy was organized by Science Division Director Boris **Berkovski**. Speakers included Shyam **Nandwani**, Bill **Lankford**, Paul **Funk**, B. **Knudsen** and Margaret **Owino**. It brought together 300 people from 64 countries and was intended to introduce them to potential international funders, but this part fell short. Others

### **LONG-TERM FIELD PROJECTS**

- \* **KAKUMA:** a total of 9000 families have been served, including 32 blind refugees, and we worked toward reducing SCI involvement to production of more CookKits. 15,000 new refugees meant that half the camp remains unserved.
- \* **AISHA:**
- \* Refugee trainer reps and coordinators from Kakuma (Adele and Nyiel **Njok**, Shadrack **Alumi** and Hellen **Lipo**) and Aisha – (Nadir **Asem**) met with Blum and Owino in Nairobi.
- \* **ZIMBABWE:** DTC hired Christing Mutandwa as the new Project Coordinator.

**INDEPENDENT NEWS:** The world's largest solar cooking system has cooked as many as 33,800 meals on a single day, besides boiling 3000 liters of water for tea. It was designed and built by Wolfgang **Scheffler** and Deepak **Gadhia** Taleti near Mt. Abu in India. It consists of 84 parabolic mirrors to produce steam for cooking, with 6 subunits which can be operated independently for smaller quantities. It is saving 400 liters of diesel fuel per day.

### **BOB METCALF'S INTERNATIONAL TRAININGS**

1987 Bolivia  
 1988 Mexico (Baja and La Piedad), Guatemala, Djibouti  
 1989 Zimbabwe, Sierra Leone, Somalia, Yemen, Egypt with FAO  
 1990 Russia (Global Forum speaker)  
 1991 Sahel: Burkina Faso, Mali, Mauritania with UNSO  
 1992 Brazil (Eco Summit), Kenya with Trickle Up  
 1993 Nepal (Trickle Up)  
 1994  
 1995 Kenya  
 1996 Kenya - Dadaab Refugee Camp  
 1997 India, Zimbabwe (UNESCO Project)  
 1998  
 1999  
  
 2001  
 2002  
 2003 Kenya  
 2004 Kenya and Tanzania  
 2005 Kenya and Tanzania  
 2006 Kenya and Tanzania

### **DEVELOPERS OF W.A.P.I.s:**

polycarbonate tube: Barrett – Metcalf – Pejack – Andreatta – Nepper;  
 bimetal disk – Roland Saye

Glass minitube - Solar Solutions (Frank Husson, Roger Murphy)

**DEVELOPERS OF COOKIT:** Bernard - Kerr - Blum, Campbell and Pejack