

Solar Energy Enterprises Co Ltd

Industrial Development of Solar Cookers in Sudan

A Private Experience

By

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The Experience of SEEC

- Solar Energy Enterprise Company
- A private Sudanese company working in the R&D of “adapted” technology products like rural water filtration units, solar thermal products and community development projects
- Started business in 1985
- Bread and butter earned from specialized work on heavy metal rolling and steel fabrication (fuel tanks and depots, hangers, steel structures, etc.)

The Experience of SEEC

- Consultancy R&D work
- As a matter of business policy, we sponsor graduate and post graduate students, plus vocational training apprenticeships. The record to date is:
- 1 Ph D; 26 M Sc's; 120 B Sc Graduation projects and 500 Vocational training apprentices .
- Directed by Dr Salih Hamadto, former Professor of Physics (Optics)



Workshop Facilities

Graduate Students
Designed Heating Unit for
Petroleum Skid Tanks





Rural Water Filtration Units: A Useful Product Line



The Solar Cooker Program

1990 - 2010

Using the workshop resources and the innovation of the students sponsored, the following product lines were developed:

- Parabolic dish cookers
- Community and institutional cooking modules, based on the Scheffler reflector
- All-metal box cookers

The Three Products



The Dish Cookers



Well-trained Technicians Good Production Capacity



Dish cooker in use



Specifications

- Aperture: (1.8 m diameter)
- Tracking: Two axis; manual
- Mirror: Stainless steel sheet
- Power to pot: 0.8 to 1.2 kW (thermal)
- Pot size: Up to 14 liters
- Carries out all cooking operations, including frying
- Cooking time: 0.5 to 2 hours

Community and Institutions Kitchens

- Based on the Scheffler collector.

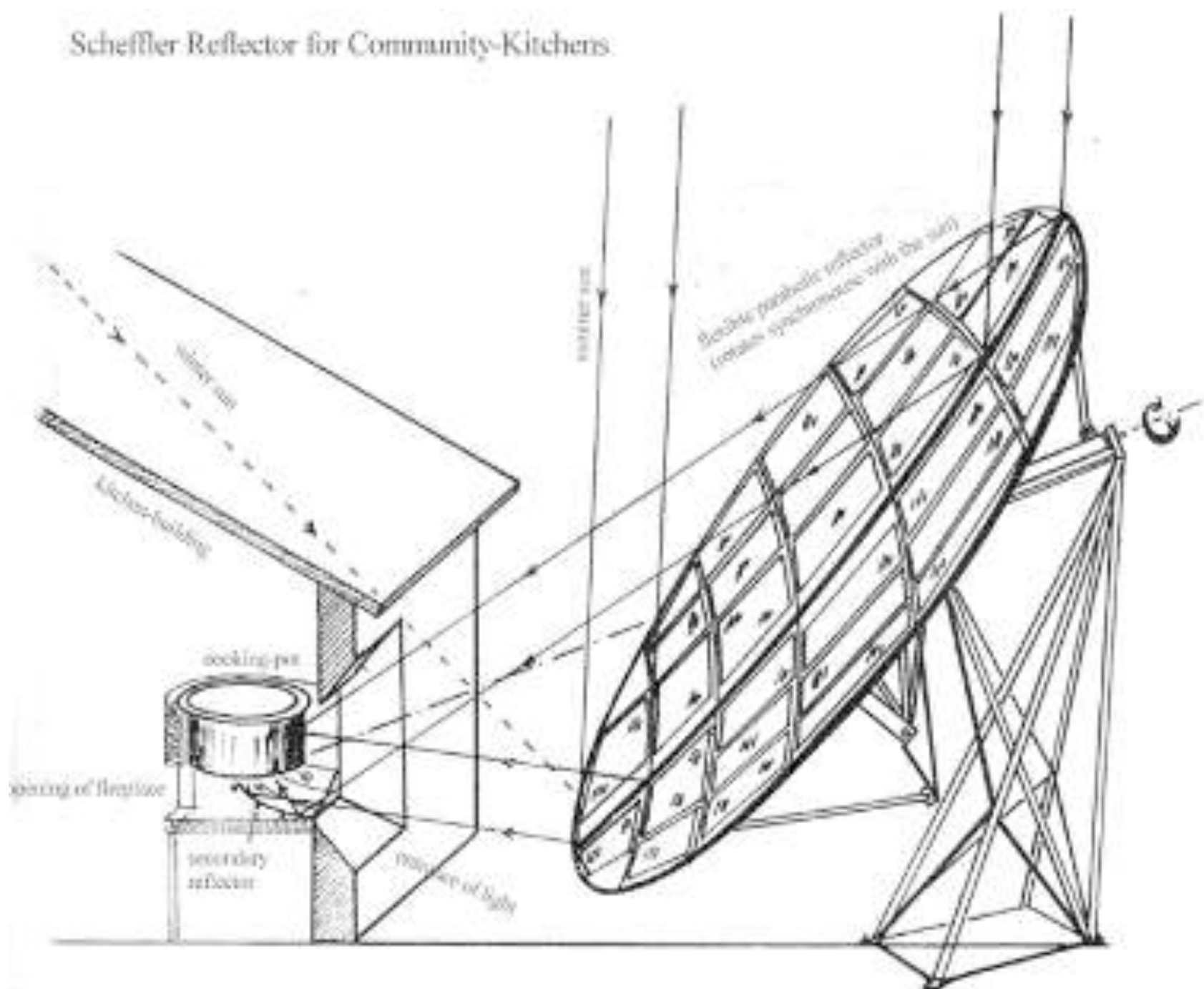
Disseminations over the past 15 years:

- A Hospital in Khartoum (5 reflectors)
- A prison in Gadarrif (3 reflectors)
- A public restaurant in Fashir (5 reflectors)
- Student hostels in outside Omdurman (4 reflectors)
- Schools in Dongola (4 reflectors)
- Demonstration units with built-in cooking place (3 modules)

Demonstration Units at Workshop



Scheffler Reflector for Community-Kitchens



Solar Kitchen Under Construction (Gedarif Prison)



Cooking Test



Two Demonstration Units at the Africa Industrialization Day Show



Box Cookers

- Developed with UNIDO for use in Darfur
- Innovative (proprietary) all-metal design – *No wood or cardboard*
- Rugged - Efficient – portable – user-friendly - aesthetically pleasing
- Simple controls for opening and closing top glass window and adjusting booster mirror
- Modular design: spare parts readily replaceable

Final Designs Ready for Field Use



Serial Production



Skilled Personnel



Master sheet metal technicians



Testing the Cookers



MSc Student Conducting Test Cooking Session



Field Testing in Darfur

(UNIDO, IOM and UNDP)



Cooking for Revenue Generation

A: Jam Making



B: Baking Light Cookies



The possibilities are limitless...

- For further information and prices, please contact:
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