

Ain Bni Mathar Morocco



Rural Landscape at Ain Beni Mathar





Ain Beni Mathar





Example: Tent-based household (poor/close to town)

Mr. Ali Dehmani
Day farm worker: \$4/day



Example: 'Permanent' Tent (close to town)



Field Study: Ain Beni Mathar (South Oujda)





Ain Beni Mathar Example: Rural/Town household



Wood
Charcoal



Propane (stew/tea/light) (\$1/two weeks)

Propane (bread oven) (\$4/one month)

Minor concern/rumor: "Bathing with solar heated water causes skin cancer ..."

2-3 Candles/day (\$0.05/each)

Mr. Mohamed Temnani, Ouled Ben Nasra, construction worker, \$8/day

Ain Beni Mathar Example: Rural household, 5km from town



Hood

Bread Oven



Hood



Field Study: Ain Beni Mathar (South Oujda)



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Field study: Tiwerdiwe



Living Sources: Farming



Walnut tree
Cash crop
(\$200-\$400/year)

Wheat (bread)
Onions/Potatoes

Construction wood

Homes Construction



Smoke stains
from cooking



Morocco is losing 30.000 hectares of forest per year to cooking based wood (Ref. CDER)

Female Literacy Problem



Wood gathering for a typical family can require up to 6 hours per day for 6 months of the year. It is a task performed almost exclusively by school age girls.

The literacy rate for Moroccan women is currently 30%, half that of their male counterparts.

Cooking: All wood-based fuel

Kitchen in Timishi



Douaz (stew)

Bread

Boiling water/Harira (cereal soup)

Cooking: All wood-based fuel



Cooking: All wood-based fuel



Outdoor bread oven



(nine children)

Mr. Lahcen Boujemaa in his kitchen

Solar Cooking Issue: Where?



Terraces/Roofs: Often the best and only area available for solar cooking

- Deep valley: Limited sun exposure during winter [12am-4pm]
- Summer sun exposure [7am-6pm]

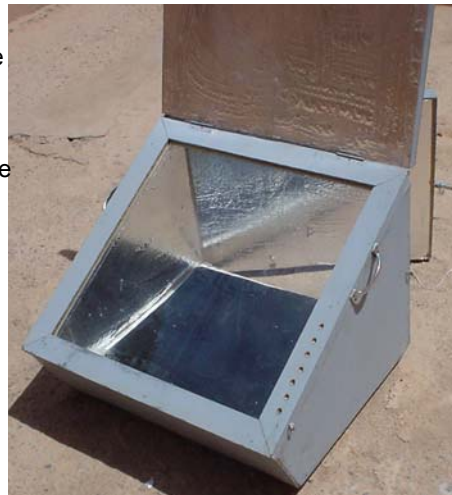
Field Study: Tiberdiwe (Seti-Fatma/Marrakech)





Previous solar cooking projects in Morocco

- **Organizations/Locations**
 - Near East Foundation, Ouarzazate
 - ADL – Atlas Soleil: Azilal region
 - France Bolivie-NTI: Agadir region
 - 'Homme et Environnement': Berkane
- **Design:**
 - ULOG (Swiss design)
- **Issues:**
 - Size (one bread only)
 - Performance reliability
 - Appearance
 - Health misconception in Ouarzazate area



The Challenge: Bake 4-8 loafs per day



Solar Cooking Test: Moroccan Bread

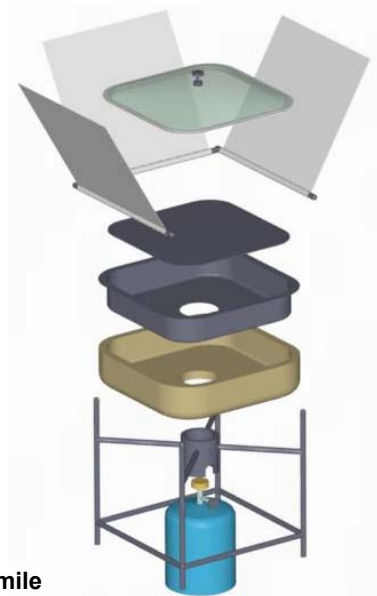
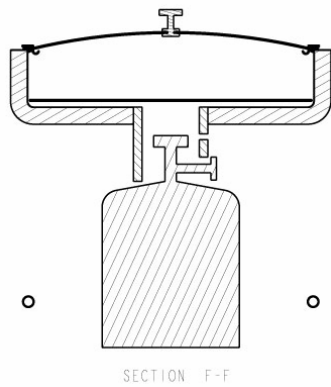


Top crust thick and relatively hard

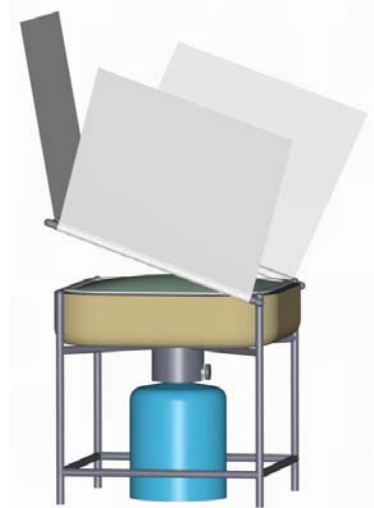
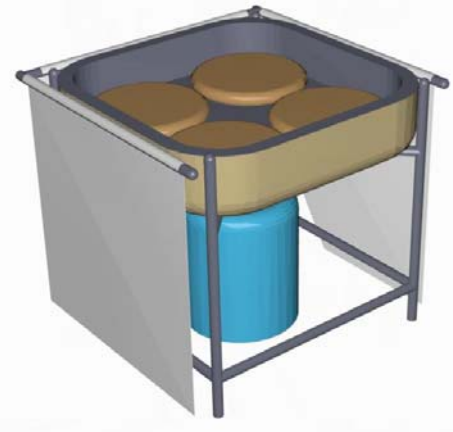
Bottom crust perfect



Competition VS. us!!



Concept design by Jennifer Miley, SunSmile



SunSmile

Schoolgirls ran down the hill without their wood pile

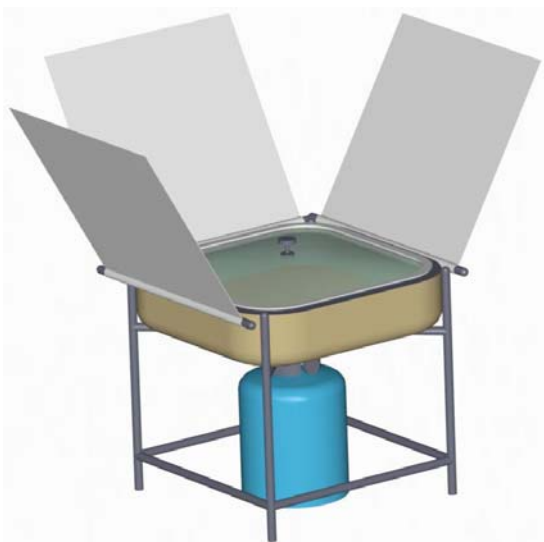
Camels climbed to the top of the sand dune to measure the sunshine

Belly dancers started singing “the solar oven is mine”

The king said his couscous never tasted so fine

Hey, this is the warm life at SunSmile farm!

Florence Cassassuce



Thank you.
Visit us in Morocco, this
March 21-25 ...