

# IRIDIMI, TCHAD

Solar cooking for refugee women from Darfur

**Objectives:**

**Provide training in the use and  
manufacture of solar  
cookers**

**Promote combined use of  
CookKits, improved wood  
stoves and “hay-baskets”**

**Provide work**



# IRIDIMI, TCHAD

**A joint project by  
Stichting Vluchteling, NL  
Kozon Foundation, NL  
Agrometeo Applications Associates, FR  
In collaboration with UNHCR, CARE, SCI and its  
associated donors, JEWISH WORLD WATCH**

**The project uses the  
CooKit (SCI)**

**Easy to manufacture**

- 1) Light and small when folded**
- 2) Not at all expensive**
- 3) Gives good results**



# IRIDIMI, TCHAD



**A semi-desert region  
about 15°8' North**

**Annual rainfall between  
60 and 100 mm**

**A few traditional  
villages of about 100  
persons existed along  
the sparse wadi's, 10 to  
20 km from each other**

# IRIDIMI, TCHAD



**An aerial view  
of part of the  
camp**

**About 17,000  
persons, but  
variable, on  
about 4 square  
kilometers or  
400 ha**

# IRIDIMI, TCHAD

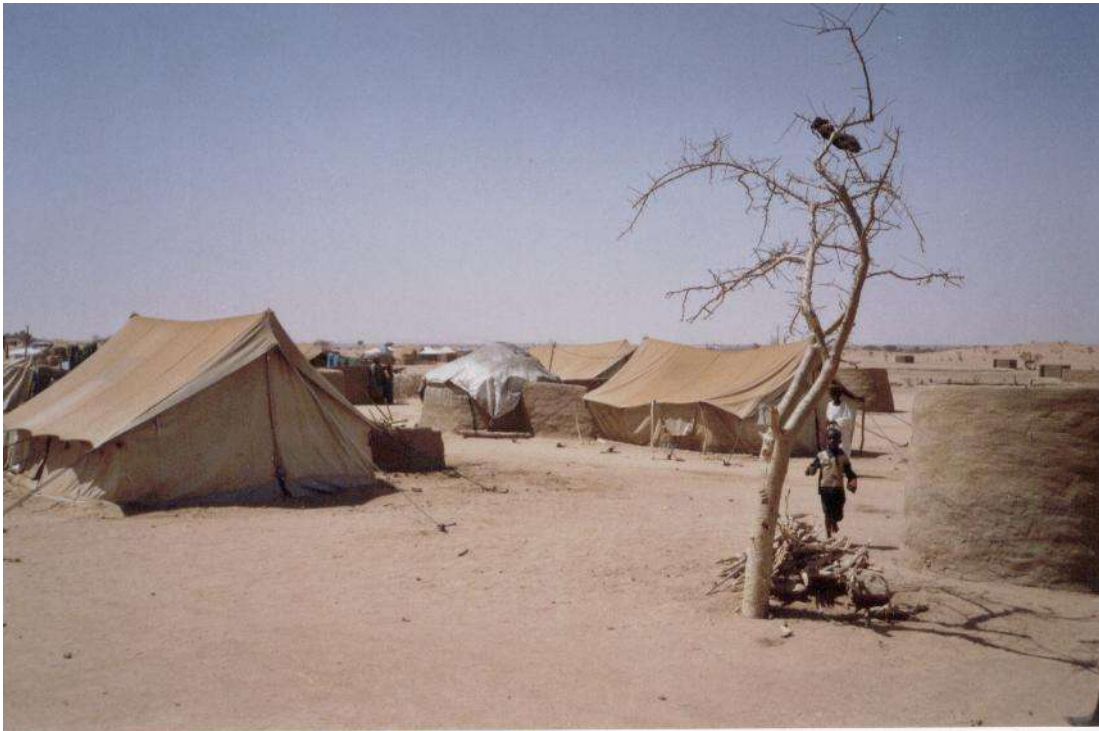
## The semi-desert region and the camp



**Firewood growing only along the banks of the wadi was barely sufficient for the local population in normal times**

**Interdiction to use the wood in and just around the camp**

# IRIDIMI, inside the camp



- about 17,000 réfugiés
- in 10 zones
- about 400 tents / zone
- mostly women and children

**Search for firewood  
often at > 10 km**

**Potential for conflicts  
between villagers  
and refugees**

# Demonstration and training Feb-Mar, May-Jun, Aug, 2005 and continuously from Dec 2005



## Project activities:

- show the use of the CookKit, as one of the methods to reduce the need for firewood
- train those interested
- provide 2 Cookkits (for the main meal and the "sauce") to those that mastered the techniques

# Demonstration and training



**Demonstration with food we brought and that distributed by the World Food Programme (meal of maize, sorghum or millet, sometimes soya, green peas)**

**Sometimes sauce from the vegetables grown next to the tents with waste water**



# February 2005, first contacts in Iridimi



**The team: 1 trainer from KoZon,  
3 trainers from N'Djaména**

**Kozon provided 100 CookKits,  
with thermo-resistant bags**

**Bought in N'Djaména:  
Aluminium pots, black paint,  
rice, beans, tea, ingredients for  
the "sauce", etc.**

**From the word go the refugees  
show intense interest:  
they propose to paint the pots**

# During the wait after setting up the CookKits



**Hot water for milk can be ready rapidly,**

**for the children, the women,  
even some men,**

**with almost as much sugar as  
powdered milk**

**That bodes well for the meal**

# Tea, at any time, the really social drink, showing hospitality



**Tea can be prepared rapidly, it is put in place after the food and repeatedly**

**Shared with colleagues, passers-by, and all those curious for testing the unknown way of cooking, all along the day**

**Because of the tea, the sugar, or just curiositea?**

# IRIDIMI, TCHAD



**Meal of maize, sorghum, millet: the soft heat of solar cooking avoids the food clinging to the pot: therefore no need to stir, as is the habit when cooking on fire. The plastic bag remains closed throughout.**

**The crucial moment: when cooked, the meal is stirred with a wooden “inverted T stick” to test its consistency, by the most revered “mama” and, after her approbation, by all:**

**“la boule” is well-cooked!  
(and solar cooking becomes accepted)**

# A new way of preparing food



**Young women accept the new way of cooking more rapidly than their elders**

**They think of the future as much as of the present, of the workload, their children, other things they can do, and ... their appearance!**

# IRIDIMI



**The administrative / social staff in each zone keeps left-overs for latecomers or for their evening snack**

# All along: reactions from the women:

## After the meal, the washing up



- **surprise: cooking without fire!**
- **no smoke, we stay clean, our clothes do not smell badly, our eyes do not sting, our noses do not run**
- **we do not have to go and look for firewood in places where we do not wish to venture**
- **none of the risks linked to fire**
- **time for other activities, like making baskets or sowing or ..**

**We never have been able to do this and cooking at the same time**



Agrometeo Applications Associates,  
Ornex, France, 2006



**While we wait to adjust the cookers to the movement of the sun, we can make basketry. That we can sell on the market and buy “la sauce”, if our “gardens” do not give it**



Agrometeo Applications Associates,  
Ornex, France, 2006

The men arrive at the right moment and also consider. The verdict:



- good for the environment
- can reduce conflicts arising from wood gathering
- the sun is for all and almost always present,
- using the “thermos basket” (bitatore), there can be warm water throughout the day and night

# Examination and, if successful, the diploma: 2 complete CookKits



**First in zones 1 and 2  
and in the village of Erre**

**Then in zones 3, 4, and 5**

**Then in all other zones**

**In return, they promised  
to train the women in the  
tents around theirs**

**They kept word, and how!**

may-jun 2005 2nd phase



**Return of the team with only one Chadese trainer: Marie Rose Neloum**

**Demo and training in zones 3 and 4**

**A further 60 women trained and “graduated”**

**The graduates of the first phase kept word and trained many others, some as many as 30!**

# Iridimi, season 2005



**Clouds do not prevent cooking as much as a lack of transparency of the sky**

**In the early part of the season there were some days with severe dust storms, preventing cooking**

# Iridimi, season 2005

**In an otherwise clear, limpid, sky, some passing clouds do not prolong the time of cooking more that 20 or 30 minutes**

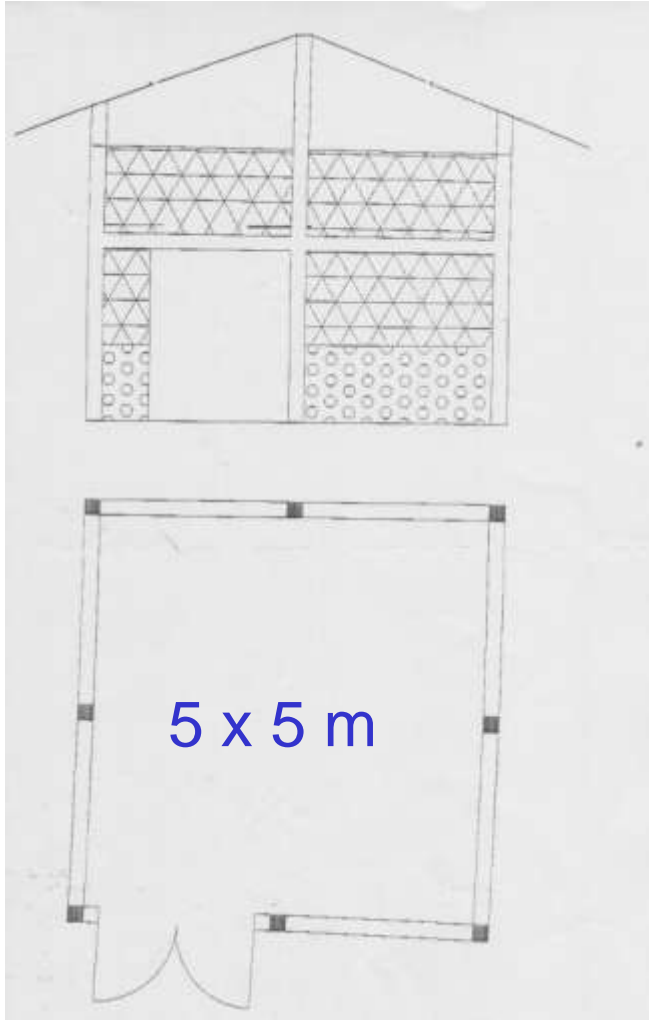


# Iridimi, season 2005



**If there are many clouds, often appearing around mid-day, the pots be brought to the initial cooking and than put into the “hay baskets” to continue cooking and keep warm until later**

# Plan for a workshop



**The roof overhangs the walls, 0.6m to the N and S, 1m40 to the E and W to avoid sun-glare on the alu when it's being worked**

**A low, stone wall, 1m30 high, a metal grill (theft, mosquitos) up to the roof for ventilation**

**Moveable canvas inside against excessive wind and dust. Louvres Against rain**

**Equipment: 3 tables, 1 cupboard, a "spit" for the roll of alu foil, a drying rack, seats**



**Local manufacture requires a workshop. A hot dry climate: ventilation, not isolation, and an overhanging roof for shade**



**In the background:  
the office of the Camp  
Manager;  
and on the hill: the three  
water tanks that provide  
a buffer between output  
from the borehole and  
demand from refugees**

# The SVAAKO team



**Marie Rose Neloum (left), one of the initial Instigators of the project and Principal Trainer, both in use and manufacture of CookKits**

**Faisa (right) with Aglass, Fatima, and Aziza one of the first four “Artisanes”, and now continuous help to the artisanes from the ten zones**

# The SVAAKO team (cont.)



**Ponlibe Palouma (left), in charge of environment in Iridimi, and Chef SAV**

**Gilhoubé Patelet, trainer in use and manufacture of CookKits and currently providing SAV and testing new developments**

# Manufacture, la gomme arabique



**Arabic gomme (Acacia senegalensis), grown in Tchad, is dissolved in tepid water and is a good glue.**

**Artisanas from zone 9 work under supervision from the “old-time” artisanas**

# Manufacture, fix the alu foil on the cardboard



**Cardboard quality is important for the adherence of the alu and suppleness of plying the Cookit**

**A smooth surface of the alu is the pride of the team of each zone**

# Manufacture, cutting the alu foil



**Use of the "spit"  
reduces waste of alu  
foil and makes  
regular lifting of the  
heavy roll  
unnecessary**

**Hand tools are  
simple and durable**

# Manufacture, drying the cardboard before starting cutting the :CooKit” shape



**Two cardboards are placed shiny sides towards each other in the “toast rack” for drying**

**There is sufficient ventilation for drying, but sheets can not “curl” much**

# Manufacture, cutting the CookKit

**Manufacture on the spot rather than industrially elsewhere? One only needs to import plain cardboard and aluminium foil.**



**Advantages:**  
- an activity in which women develop their own initiative and creativity, and earn some money (to buy the “sauce”?)

**L to r: Aziza,  
Faisa, Aglass**



# Manufacture, plying the CookKit



- they promote the use of the CookKit through a natural extension process, and contact with other women that wish to use a CookKit, which has become “theirs”

L to r: Faisa, Aglass

# A simple device against excessive winds



**Using either eyelets or strong bands stapled onto the forward flap, one can fix a string, held under a stone, that keeps the “sun-ward” flap down in wind and also permits the entry of early-hour sunshine. Tests done up to > 25 knots. Cost: a few cents**

# After Sales Service (SAV)



**SAV:**  
**Give advice**

**Repair cracked  
CooKits**

**Touch up the paint of  
black pots**

**Exchange used poly-  
propylene bags**

2006 and onwards:  
Equip all households that so wish at  
Iridimi and in the other camps



**It seems that  
learning comes  
naturally when  
one's young**