

# The CookKit: Its introduction, acceptation and follow-up in Gorom –Gorom (Northern Burkina Faso)

by

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## Summary

*In West-Africa 90% of the population uses firewood for cooking. In Gorom-Gorom, situated in the northern province Oudalan of Burkina Faso, the scarcity of wood is increasing. Its side effects are well known: deforestation, damage to the environment and a burden to women, who daily have to find the necessary firewood or have to buy it from their meagre household money.*

*KoZon, a Dutch foundation started the introduction of the CookKit in this region in 1997, following earlier experiences by others in the USA and Kenya. Compared to other solar cooking devices the CookKit can be produced at low cost, can be made locally, is easy to handle and can be folded and stored as a small parcel when not in use. KoZon introduced the CookKit also in other countries in West-Africa, like in Niger, Mali and Chad, by organizing demonstrations and training sessions with local women groups.*

*Evaluations were started in Gorom-Gorom in 2002, to check how people perceive the advantages and possible disadvantages of the CookKit, which factors affect its acceptation, diffusion and use.*

*Results were that the CookKit is considered an additional tool for cooking, if weather permits, in combination with a stove and retention heater, two CookKits per family, the introduction in areas with severe wood scarcity and follow-up assured.*

## Samenvatting

*In West Afrika gebruikt 90 % van de bevolking hout voor het kookproces; in Gorom-Gorom in de provincie Oudalan in Burkina Faso, neemt de houtschaarste toe. Het effect van ontbossing is bekend, een bedreiging voor het milieu, een zware belasting voor de vrouwen die dagelijks brandhout moeten vinden of dat moeten kopen van hun beperkt huishoud budget.*

*KoZon, een Nederlandse stichting, heeft vanaf 1997 het koken met de CookKit geïntroduceerd in deze regio, als vervolg op eerdere experimenten door anderen in Kenia en USA. In vergelijking met andere kooktoestellen op zonne-energie, is de CookKit een eenvoudig en lokaal te maken apparaat, met lage productiekosten en het zou daardoor het koken met de zon binnen het bereik van een groter publiek kunnen brengen. KoZon introduceert de CookKit ook in andere West-Afrikaanse landen als Niger, Mali en Tsjaad, door het organiseren van demonstraties en trainingen met lokale vrouwengroepen.*

*Vanaf 2002 zijn evaluaties gestart in Gorom-Gorom om te onderzoeken hoe de gebruikers de voor- en nadelen beoordelen van de CookKit en welke factoren van invloed zijn op de acceptatie, de verspreiding en het gebruik van de CookKit.*

*Resultaten waren dat de CookKit wordt gezien als een aanvullend instrument voor koken, mits het weer gunstig is, in combinatie met een kachelte en hooimand, twee CookKits per familie, introductie in gebieden met ernstige houtschaarste en in follow-up wordt voorzien.*

## Sommaire

*Dans les pays de l'Afrique de l'Ouest la principale source de l'énergie domestique est le bois de feu; dans la région de Gorom-Gorom dans la province de Ouadalan en Burkina Faso, la pénurie de bois est devenu un grand problème. Le déboisement et ses effets désastreux, une menace pour l'environnement, sont connus, en plus un alourdissement des charges quotidiennes des femmes.*

*Depuis 1997, KoZon, une ONG Hollandaise a introduit le cuiseur solaire, le type de CookKit, dans cette région, après des expériences aux Etats-Unis et au Kenya. En comparaison d'autres cuiseurs solaires le CookKit est d'une extrême simplicité, à la portée d'un plus grand nombre d'utilisateurs à cause de son coût modeste et de sa production locale faisable. KoZon a en plus introduit le CookKit*

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*dans d'autres régions de l'Afrique de l'Ouest, comme au Niger, au Mali et au Tchad, en donnant des démonstrations aux groupements des femmes locales.*

*A partir de 2002 KoZon a réalisé une méthode d'évaluation à Gorom-Gorom, pour juger l'utilisation et les facteurs influençant l'acceptation du Cookit.*

*Les résultats étant, le Cookit est considéré un instrument complémentaire, si le temps le permet, en combinaison avec le four et le panier thermos, deux Cookits par famille, l'introduction dans les régions avec une pénurie de bois sévère et un programme de suivi.*

### **Characteristics of the Cookit**

The Cookit is made of a piece of cardboard lined with aluminium foil. The middle part is flat, while the sides are folded upward. A black pot, maximum capacity 5 L, or two smaller pots are put in the middle, inside a thermo resistant plastic bag. The sides are positioned in such a way that the sunrays are reflected towards the black pot. In this way food can be cooked and water can be heated within a few hours of bright sunshine, often to the surprise of the people, provoking the remark: "You have to see it to believe it".

The local production of Cookits has the potential of an income generating activity and has started in different places. The technology being easy, the only constraint could be the availability of the materials needed, like aluminium foil and thermo resistant plastic bags.

An important factor for the introduction is the price of the complete Cookit (with pot and 2 plastic bags), ranging between 5000 - 7500 Fcfa (€ 7-10) which, for average local women, is an amount too high to pay at once. On the other hand, compared to other solar cookers the Cookit's simplicity, low cost and easy local production could introduce solar cooking to a wider market of people.

### **Acceptance of the technology**

Various technologies of solar energy have been tested in different countries. The experiences vary: doubts on the usefulness of the technology are uttered. Women have to change their cooking routine and learn a technology which is dependent on the availability of solar energy; sometimes the meal is not ready in time and cooking needs to be continued with other cooking devices.

In a refugee camp in NE Ethiopia the evaluation of Cookit use (1999) revealed that 94 % of the households use the Cookit in combination with other cooking devices<sup>2</sup> The savings on firewood after the introduction of the Cookits were 32 %. In another refugee camp in Chad where Cookits were introduced in May 2005, women report time saving, absence of smoke and easier cleaning of pots as positive factors.

In most of the regions where KoZon has introduced the Cookit the acceptance of this new technology was very high at the start, but exact figures on the utilisation of the Cookit afterwards were not known. To check its usefulness, KoZon carried out three different evaluation surveys in the Gorom-Gorom project area in the period 2002-2005.

### **Evaluation Cookit use**

#### **I. First survey, 2002**

The first evaluation was carried out in 2002 by Jonas Wanvoeke (Wanvoeke, 2003). He interviewed 58 Cookit possessors and concluded that 30 % of them used the Cookit regularly during the dry season, March-June. He concluded that the small capacity of the Cookit makes it suitable for small families and less practical for extended families, with an average of 10 persons per household. The long cooking time was considered a disadvantage but on the other hand the fact that the food cannot burn gives the opportunity to use that time for other work. The taste of the food cooked in the Cookit was judged as (very) good. The cost of the Cookit (Fcfa 5000-7500 ) was too high for the average family. Wanvoeke discovered single men's interest, teachers for instance and recommended them as potential key figures in the process of acceptance.

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<sup>2</sup> AISHA Solar CookKing Project, Evaluation Report to Solar Cookers International, 2003.  
[www.solarcooking.org](http://www.solarcooking.org): Solar Cooking Archive, Country reports: Ethiopia.

## II. Second survey, 2003

The second evaluation by Monika Sanou (Sanou, October 2003) had the following objectives: gain a better insight in the suitable period for cooking with the CooKit, obtain more concrete data on the use of the CooKit and inventory of recipes cooked with the CooKit.

A list of questions was formulated and 51 persons were selected and interviewed according to the checklist. Summary of results:

- The periods in which the CooKit is used are March( 63% of the interviewed families), April (100 %), May (67 %) and October (39 %).
- 55% of the families used the CooKit 0-2 times a week, 45 % 3-7 times a week in the suitable months.
- A big variety of recipes is prepared: rice, sauces (with meat or chicken and legumes)
- The CooKit is also used to heat water for washing baby's, to make tea and coffee, to cook peanuts and to heat milk for making yoghurt.
- Young single men are interested in using the CooKit.
- 5 Persons complain that the food did not succeed, because of lack of sun.
- Again the taste of the food is judged as good to very good by 88 % of the interviewees.
- Only 2 persons had a retention heater and used it.
- 48 out of the 51 persons intend to buy a new CooKit as soon as the old one needs to be replaced.

Large families ask for a bigger pot, which was not feasible. A solution to this problem could be to use two or more CooKits at the same time.

KoZon formulated the following conclusions regarding its future policy:

- To avoid unnecessary failures and disappointments among potential CooKit users KoZon should stress even more its policy of advocating the combined use of 3 complementary techniques: the improved stove, the CooKit and the heat retention cooker, three affordable methods to economize on firewood.
- KoZon should focus on urban areas, where firewood can only be bought on local markets and prices are high.
- KoZon should follow-up initial CooKit introduction projects with additional training programmes.
- KoZon should cooperate more closely with local organisations to ensure continuation of instructions, guidance and support.

## III. Third survey, October 04 – March 05

The third evaluation in Gorom-Gorom (Follow-up project, Sanou 2004-2005) aimed at a better use of the CooKit after additional training sessions. Those families were selected that made little or no use at all of their CooKits. A 4-weeks training programme was carried out by 6 trainers, each selecting 6 families. All families were visited twice a week and received guidance during the cooking process. The initial cooking results were not optimal, owing to extraordinary unfavourable weather conditions, a fact that was confirmed by official weather statistics. In order not to leave the women discouraged the initial training programme was extended with 4 additional visits.

Two interviews took place to check the effect of the training, one in October 04 and another one in March 05. Results:

1. during the period September- mid November out of the 30 trained families 52 % had used the CooKit 1-2 times, 21 % 3-4 times and 8 % 5 times and more; 10% had not used the CooKit during these 10 weeks.



Fig. 1: CooKit demonstration in Burkina Faso

2. The question how much money CookKit use had saved on expenses for firewood resulted in estimated savings of Fcfa 50-180 (€ 0,08 - 0,16) per time.

From January up till mid-March the weather was not favourable for solar cooking, so during the final interviews in March half of the families had not yet used the CookKit, but intended to do so in the next weeks. 25 Out of 28 persons have learned new recipes with the CookKit.

Conclusions:

- the extra training sessions did not increase the use of the CookKit in this sample; the unfavourable weather conditions may have played an important role.
- The target group learned many new recipes and possibilities with the CookKit and had the intention to practise these in the coming period.
- When used as sole cooking device, the CookKit is suitable for small households and can be used during a few months per year with enough sun-hours per day and a clear sky (no dust).
- Food requiring long cooking times, e.g. peanuts, beans and meat sauces, are most suitable.
- Additionally, without any risk of failure, water can be heated for bathing, tea and coffee making.

### **General conclusions**

The acceptance of the CookKit is higher in households with a limited family size, since the size of the cooking pot should not exceed 5 L. Bachelors, or men living temporary apart from their wives, are enthusiastic CookKit users.

Advantages mentioned by women and men are that once the ingredients are installed in the pot, there is no more need to watch the process, no risk of burning and one is free to engage in other activities. The taste of the food is unanimously considered excellent.

The disadvantages most heard are the long cooking time and risk of failure when the sun disappears or, as in some periods of the year, when unfavourable weather conditions prevail. Also the limited durability of the CookKit, if not properly taken care of, is viewed as a disadvantage..

The fact that only small portions can be prepared in the CookKit makes it less suitable for the extended families, usually comprising more than 10 persons.

Another problem is the price of Fcfa 5.000 (€ 7) for a CookKit + pot, an amount especially women cannot afford to spend in one time. On the other hand, from the statements made in the survey it can be concluded that this price is recovered after only 30 times cooking with it, not mentioning the positive environmental effect of saving wood!

Many of the disadvantages can easily be overcome when the CookKit is used in combination with an improved woodstove (or gas) and a retention heater. This combination “guarantees” a warm meal and saves wood during the greater part of the year. In fact the retention heater can be used all year round. In combination with two CookKits flexibility in cooking and chances for saving wood improve even further.

### **Lessons learnt**

1. The CookKit is an additional tool for food preparation; each time it is used wood is being saved.
2. It is important to continue the strategy of combining three methods for saving wood: a) improved stove or, if available, gas; b) CookKit; c) retention heater.
3. The use of two CookKits per family solves the problem of small pots and creates more cooking options.
4. Water heating is an additional option and can be done without any risk of loss of ingredients.
5. The target group should be small families of less than 6 members or single (male) households.
6. Where wood is most scarce or getting very expensive the willingness to use the CookKit will be higher. Therefore priority should be given to projects or experiments in urban areas and refugee camps.
7. Follow-up, guidance and encouragement should be practised and given by local institutions, trained in this matter.

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