

FINAL ASSESSMENT REPORT

Solar Cooking Pilot Project period February 2007 – January 2008

Partnership for Integrated Sustainable Development Association (PISDA)

Solar Cooking Foundation The Netherlands (SCN)

1. Activities

Conduct a solar cooking promotion campaign

In the Gende Gorba, Gerbicha and Kajima peasant associations a total of 240 beneficiaries and 18 instructors have been selected. Additionally during the 3rd quarter another 85 beneficiaries have been selected in Kebele 09, Debre Zeit.

The selected beneficiaries are all female headed households. Most of the beneficiaries are very poor and illiterate with age between 25-40 years.

Booklets for all beneficiaries were printed and distributed during the 3rd quarter. These booklets are distributed as part of the complete cookit set.

Between February and July practical training and group discussions were conducted for the female instructors, animators and end users.

In October PISDA has issued a detailed report “Evaluation of acceptance of solar cooker”.

The major approach used in evaluating the acceptance of the solar cooker was through collecting primary data from the beneficiaries and non beneficiaries in the project area.

This was done through individual interviews and focus group discussions. In general it is concluded that the respondents have accepted the Cookit as a means of saving money, time, easing work load and avoiding health hazards.

The results of this evaluation were also discussed with the director, project coordinator and animators during the visit of Clara Thomas and Nel Hessel in November.

Conduct training of solar cooking staff

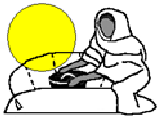
In March the first solar cooking introduction/ promotion session was conducted to 100 women by Clara Thomas in one of the villages. Also in March the first introduction /training workshop was conducted to 12 instructors from the pilot project villages by Clara Thomas.

During the 3rd quarter another 5 instructors have been trained about the techniques of solar cooking project as a promotion of environmental management.

All instructors have been trained in performing a solar cooking educational program.

The solar cooking staff in Debre Zeit consists of 1 (male) supervisor, 4 (female) animators (1 per village) and 15 female instructors (2 or 3 per village). Animators make frequent home visits to check the use of the cookit and encourage women to increase the use, discuss and solve problems. They also organize and guide the monthly collective solar cooking workshops. Instructors' main task is to support the animators. The supervisor has mainly an administrative / organizational task and also the task of making home visits.

Per village 3 to 4 (female) animators/ instructors have been trained about the techniques of solar cooking, the use and maintenance of Cookits and hay baskets, the use of fuel saving stoves for Injerra and about the techniques of water pasteurization and using the WAPI (Water Pasteurization Indicator). The complete PISDA staff have had a training in fabrication of WAPI, conducted by Clara Thomas in November.



Conduct solar cooking and water pasteurization training sessions workshops

During monthly meetings, organized by the village animator and project supervisor, beneficiaries come together for collective cooking with cookit and hay basket. Animators give instruction to groups of 80 – 86 beneficiaries during this day, and monitor the frequency of using the cookit, the type of food cooked, the problems encountered. Administration is perfectly performed.

A training on water pasteurization was given to the animators/ instructors by Mrs. Clara Thomas in November. During the 4th quarter the training has been continued to all the beneficiaries. Detail practice was done by the beneficiaries how to pasteurize the water and measure it with WAPIs.

Make preparations for local production of solar cooking devices

One cookit set (including 1 cookit, 1 black pan, 2 heat resistant plastic bags, instruction material in a cotton bag) and one hay basket has been supplied to each of the 344 beneficiaries. Staff members (supervisor, animators and instructors) use 2 cookits. The production of suitable (heat sustainable) plastic bags is taking place in Debre Zeit. Water cans have not been supplied to the beneficiaries. The purchase is delayed because the budgeted cost was not sufficient (due to market inflation the water can is more expensive than budgeted). Extra contribution has already been obtained from the beneficiaries to cover for the expenses.

Experiments related to the development of high temperature solar cookers have been started, but did not sustain in the implementation of the parabolic solar cooker. The type of parabolic solar cooker proposed, the Scheffler type, consists of both a very large parabolic and a kitchen-building. This proposed solution has been refused because of very high costs. Further discussion and investigation needs to be conducted on the implementation of high temperature solar cooking, type SK 14 for collective use, e.g. schools and hospitals. During the 4th quarter training for local production of cookits was organized by PISDA in collaboration with Bereket Solar in order to produce cookits locally for sustainable distribution in the future. As a result 5 animators and 4 beneficiaries are trained and are capable of producing the cookit in Debre Zeit.

2. Final results

In total 344 beneficiaries anticipated in the project, which is slightly above expectation (estimated number in contract is 320). All of them are female heads of households. All FHHs have a hay basket and a fuel saving stove for Injerra for their own use, besides a cookit set. Most of them have two cookit sets.

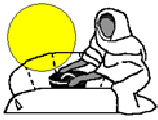
In the three rural areas mostly cow dung is used for cooking. Collecting fuel for cooking means collecting cow dung and firewood together. Cow dung is used in the fuel saving stove for injerra and not for cooking 'Wat' because during stirring the bad smell of cow dung will go into the food. Using cow dung means that the problem of collecting firewood is even worse, there is hardly any firewood.

The food cooked in the cookit is a big variety: cabbage, bread, carrots, tomatoes, soup, nifro (wheat) chick peas etc. A careful estimation is around 10 % of the FHH's use the cookit on a daily basis, while 10 % do not use the cookit at all.

During evaluation in October, when beneficiaries were interviewed, the response of most FHH's was that up to 15 Birr (appr. 1 euro) per day was saved by using the Cookit.

PISDA rents a small office in Debre Zeit, however not in the centre. The office is very small, not very suitable as a training centre. It lacks furniture, pc, telephone, etc.

The principles for a more regular use of cookits and for integrated approach (alternating use of cookit, hay basket, fuel saving stove) is understood by a number of beneficiaries.



A detailed evaluation on the use and cost of solar cookers is established in October, and discussed thoroughly during the visit of Clara Thomas and Nel Hessel. Some of the conclusions from the PISDA evaluation report are:

- *The information about the cookit is not limited to beneficiaries only, neighbours and other community members are also aware of the presence and use of the solar cooker*
- *The solar cookit is highly accepted by the beneficiaries and there is a high demand on the side of the community*
- *According to respondents the cookit reduced the use of fuel wood, labour and money. They said that family prefers the taste of food cooked with the cookit than that with fuel wood*
- *Almost all respondents have expressed that Cookit minimizes health hazards*
- *The beneficiaries are more friendly with the new technology. If the sun light disappears after they start cooking, due to clouds they immediately take the food item out of the cookit and prepare it the traditional way, Instead of waiting for the light to shine again.*
- *The provision of Cookit and Fuel Saving Stove have much impact in curbing deforestation, avoiding soil erosion and combating climate change.*
- *In general it is possible to conclude that the respondents have accepted the Cookit as a means of saving money, time, easing work load and avoiding health hazardous.*

It should be noted that the phrase “fuel wood” is used for both firewood, cow dung and charcoal. Mostly cow dung is used for cooking injerra. Cow dung is available in all villages, either by collecting from the fields or by buying from farmers who own cattle.

PISDA succeeded in planting a total of 119,843 tree seedlings on the back yards of beneficiaries in Gerbicha and in Gende Gorba.

It can be concluded that 344 families of approx. 6 persons benefit directly from the project:

- *By saving money, firewood and cow dung*
- *by cooking in a healthier way*
- *by eating food with more vitamins (retained by the use of cookit and hay basket)*
- *Through income generating activities*
- *Education, literacy*

Additionally 4 animators, 17 instructors (all female), 1 supervisor, 1 administrative officer, 1 project officer benefit from the project by management training and education

Perspective for future sustainability of the project activities and/or results.

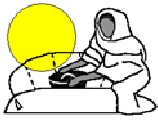
Mr. Gullilat is director, teacher, supervisor, manager, inspiring master, motivator, coordinator of the project in the four villages. Through his vision on the integrated approach he also has a strong influence on the results realized so far. He operates from his office in Addis Ababa. He visits the four villages on a weekly basis and attends most of the monthly meetings in the villages. Mr. Gullilat also encourages the women and explains to them the environmental impact. It is obvious that he is respected by everyone, especially all beneficiaries, instructors and animators.

At the moment there is nobody who can replace mr. Gullilat.

SCN's visit in November and many discussions with mr. Gullilat about future sustainability and continuation of the project in 2008, have concentrated on 2 major issues:

- *For SCN the agreement of a qualified female District Manager in Debre Zeit is a very important condition for a successful continuation of the project and subsequent support from SCN during 2008.*
- *SCN board members have expressed their concern about the low quality and unstable production and supply of Cookit sets as has been experienced during our visit in November 2007. SCN has regularly expressed these concerns to mr. Gullilat, and as a consequence five animators/instructors have been trained in the manufacturing of cookits in February 2008.*

Additionally, although water pasteurization has been introduced, but has not been implemented yet.



Unforeseen effects or side-effects

- *Education and capacity building needs on-going attention. For example the monthly workshops in the four villages are conducted for large groups of beneficiaries and should take place in groups of maximum 25 women only.*
- *Management and project coordination takes place from PISDA's main office in Addis Ababa, while the project activities take place in the rural areas of Debre Zeit*
- *Transportation: PISDA has expressed that "severe and regular transportation problem impaired staff to travel to the project sites sometimes". Also travelling from Addis to Debre Zeit is costly and time-consuming. Due to market inflation and soaring up of fuel price Bereket Solar has stopped taking the produced cookits to the different site.*
- *Continuation of cookit manufacturing has become more uncertain. Since the last months of 2007 Bereket Solar (mr. Bereket Dessie) stopped with the production of cookit sets for the project.*

3. Concluding comments

- *Deforestation and high prices of fuel wood in Ethiopia, and especially the surroundings of Debre Zeit, are a severe problem. Solar cooking, using the cookit, hay basket and fuel saving stoves is therefore necessary and urgent.*
- *PISDA has made a good start by helping 344 families. Expanding with at least 450 families in 2008 is necessary.*
- *Further coordination on the implementation of high temperature parabolic cookers (the SK 14 model is recommended; the Scheffler type is definitely rejected)*

Most important recommendations from SCN:

- *It is a first priority for further development of the project that in the centre of Debre Zeit an office is rented; A place for a workshop in order to manufacture complete cookit sets, WAPI's, insulated hay baskets and fuel saving stoves, including a space for storage near the project sites is highly recommended.*
- *For coordination, making programs, reporting, organizing meetings and trainings, fulfilment of local management a project district manager in Debre Zeit has to be appointed.*
- *Increase of management/coordination capacity of project supervisor, animators and instructors.*
- *Give animators an opportunity to learn the role of a teacher in training a group of around 25 women; Select instructresses who are experienced and motivated solar cookers and hay basket users and have a natural talent to give instructions; they could become a real assistant for the animators;*
- *Upscaling and improvement of the introduction of the insulated basket as a very important means for cooking, saving fire wood and cow dung.*
- *When the project becomes more large scaled, transport needs urgent attention.*
- *PISDA should develop a program for active promotion of solar cooking and water pasteurization activities in Debre Zeit region, for authorities and government representatives.*
- *PISDA should continue to stay in close contact with mrs. Janny Poley (Environmental Department of the Dutch Embassy). Mrs. Janny Poley is playing an important role because of her contacts with other NGO's and important partners like HOa REC-REN (Horn of Africa Regional Environmental Centre and Network).*
- *HOa REC-REN are a very important partner for PISDA in connection with upgrading and expansion the coming years and also concerning the Jatropha developments. PISDA should take initiatives to keep the communication with HOaREC-REN vivid.*