



Foundation Solar Cooking  
The Netherlands

**REPORT WORK VISIT ETHIOPIA**  
**Solar / integral Cooking and water pasteurization Project**  
Partnership for Integrated Sustainable Development Association  
&  
Solar Cooking Foundation the Netherlands  
Clara Thomas & Nel Hessel  
October 27 - November 15, 2007

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Attachments available in SCN and PISDA archive:

- *Program fieldtrip*
  - List of fieldwork activities, participants and locations
  - List of subjects, meetings and participants
- *Evaluation report PISDA October 2007*
- *Minutes of meeting: discussion on evaluation report, PISDA/SCN, Nov. 07*
- *Minutes of meeting Dutch Embassy/ HOa REC-REN/ SCN, Nov 07*
- *Minutes of meeting Bereket Dessie, Gullilat Aberra, Nel Hessel, Clara Thomas Nov 07*
- *List names PISDA animators and instructresses, Nov 07.*

## **I Invitation by PISDA and follow up of first visit March-April 2007**

*Visit March-April 2007 Clara Thomas and Arnold Leufkens*

In March – April 2007 PISDA invited Solar Cooking Foundation the Netherlands to start up the solar cooking project by performing solar cooking promotion meetings, training for instructors and animators and first introduction to beneficiaries.

A public solar cooking promotion meeting took place in the village Gerbicha for 60 women and men, and an introduction workshop in Gende Gorba for 30 women.

Six instructresses of Gende Gorba and six of Gerbicha were trained in teaching solar cooking for all beneficiaries of their villages. All together 24 instructresses were selected by PISDA executive director mr Gullilat Aberra.

In total 344 beneficiaries attended monthly solar cooking meetings, per village / kebele 86 beneficiaries, one animator and six instructresses.

*Invitation by PISDA for working visit October-November 2007*

Mr. Gullilat wrote in June 2007: “As part of the project implementation PISDA feels very proud to invite you in your capacity as a donor and chairwoman of SCN to come to Ethiopia for a purpose of:

- Giving short orientation on water pasteurization and instruction on the production Water Pasteurization Indicators (WAPI's);
- Giving short solar cooking classes;
- Develop common monitoring and evaluation formats for the terminal evaluation;
- More over to discuss and develop management for 2008”.

The target group: 344 beneficiaries in four villages: Gende Gorba, Gerbicha, Kajima and Debre Zeit.

## **II Objectives work visit**

On base of experiences and results visit SCN March-April 2007, the bi-annual report of PISDA/ mr Gullilat Aberra and the invitation of mr Gullilat, Nel Hessel and Clara Thomas assembled a list of action points to be done during the visits and to be discussed with mr Gullilat. All the points were in advance discussed with Henk Crietee and Arnold Leufkens, both member resp. advisor of SCN.

On base of these objectives, a program was developed in close cooperation with mr Gullilat Aberra, for fourteen days stay in Debre Zeit region (the project site) and five days in Addis Abeba.

- *Formulate proceedings solar/ integral cooking project Debre Zeit region 2007 (see attachment 2);*
- *Discuss in detail PISDA application form (including budget details) for Wild Geese 2008;*
- *Perform a supervision training on solar cooking and on water pasteurization for animators, instructors and staff PISDA and teach production of Water Pasteurization Indicators (WAPI);*
- *Develop a final evaluation and monitoring after one year pilot project in the perspective to continue the project for the period 2008-2010;*
- *Develop project management by PISDA 2007– 2008 in four kebeles Debre Zeit region: Debre Zeit-09, Gerbicha, Kajima, Gende Gorba;*
- *Develop promotion materials by recording film on solar cooking / water pasteurization by Lokaal Mondiaal (film producer the Netherlands).*
- *Develop with PISDA a network of organizations and enterprises in the perspective of developing a business and care (marketing and follow up) strategy to begin with in the Debre Zeit Region.*

In the following chapters all objectives will be described and recommendations formulated.

### III Proceedings project 2007

Mr Gullilat developed format for the animators to fill in during the monthly solar cooking meetings with beneficiaries. Per beneficiary the answer is marked in the format. Each month this is repeated and discussed. All beneficiaries explain during the meeting how often they use the cookit, what they cook. If they do not use the cookit, why not. This method is remarkable because a woman has to explain in front of a group of 86 other women how she uses the cookit for daily cooking. On the other hand women know this way of public explanation and public feedback. First impression is that many women use the cookit, sometimes 3 times per month, some more frequently and some use the cookit every day, also 2 times per day.

On initiative of mr Gullilat a first process evaluation took place to investigate the effect of the solar cooking introduction with 344 beneficiaries.

PISDA initiated this first evaluation and invited a consultant experienced in developing and performing evaluations, Ato Belayneh Assegu. On the list with all the names per village, each fifth beneficiary was selected to attend the evaluation interviews.

Group interviews with beneficiaries and non-beneficiaries were organized and individual interviews by animators resulted in filling in a questionnaire. The final report was written by Ato Belayneh Assegu on base of collected data, group and individual interviews.

Some conclusions (selection from evaluation report)

- *“The information about the cookit is not limited to beneficiaries only, also community members are aware of the presence and use of the solar cooker.*
- *There is a high demand on the side of the community;*
- *The cookit is highly accepted;*
- *Family members prefer the taste of food cooked in the cookit rather than food cooked with fuel wood;*
- *If the sunlight 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.*
- *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 avoid health hazardous”. (end quotes)*

One of the interesting recommendations (selection from evaluation report)

*“It would be highly beneficial if a means of improving the size of the cookit is devised and materialized”.*

*“The idea of participatory project implementation should continue, if needier female households are desired to benefit”.*

During the work visit Mr Gullilat organized a meeting with a animators and 8 instructors to discuss main points from the evaluation report.

Animators gave background information which was partly new for Clara and Nel: 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.

In general: There is good begin using the cookit in the four sites; it is not clear how frequent women cook in the cookit; there is quite a number of women cooking very frequently. Some even developed the habit that when the sun shines, the cookit with food is immediately placed into the sun. This is a first step in solar cooking awareness.

#### **IV Continuation and application 2008**

In April 2007 Mr Gullilat sent an application request for 2008 to Solar Cooking Netherlands (SCN) / Wilde Ganzen. The board of SCN discussed this application with Wilde Ganzen and concluded that the budget should be more specified. Together with mr Gullilat several meetings took place and each item was thoroughly discussed. Discussions also referred to the bi-annual report written by PISDA (mr Gullilat). On base of proceedings (evaluation), bi-annual report (PISDA) and experiences Nel and Clara during the working visit and comments of board SCN and Wilde Ganzen the following items have been revised and specified:

- Total number of beneficiaries decreased to 450 in stead of 700 because of capacity PISDA;
- Extra supervision meetings for instructors and animators as well as increasing instructresses allowances;
- Follow up meetings for beneficiaries 2007 and providing subsidized cookitsets;
- Subsidized hay baskets and water cans
- Fuel saving stoves also for daily use (a pilot);
- SK 14 parabolics for a school in Debre Zeit
- Initiation of a pilot Jatropha seedlings
- A loan revolving fund
- An office annex training/ demonstration room and storage in Debre Zeit
- A project coordinator in Debre Zeit;
- A vehicle: scooter mini-automobile
- The budget for a branch office in Debre Zeit and a project coordinator for the four sites in Debre Zeit needs thorough discussion and development of a plan of action as well as the set up of a profile for the function of project coordinator.

#### **V Training solar cooking and water pasteurization**

*Solar cooking meetings and visits to sites.*

During the working visit Nel and Clara visited the four sites of the project: Gende Gorba, Gerbicha, Kajima and Debre Zeit-09. In Gende Gorba as well as in Debre Zeit the monthly solar cooking meeting, attended by 86 beneficiaries took place. The animator organized and led the meeting, filled in the formats for monitoring and most important all beneficiaries took their cookitsets from home to put into the sun often with food or with water for pasteurization.

These meetings (follow up solar cooking) are organized as the monthly collective cooking meetings (see application Wilde Ganzen). It was quite clear that many of the women know how to set up the solar cookit with food (they are the regularly users) and other women had no experience.

The role of an animator is to give instructions to the beneficiaries while the role of an instructor is to support the animator in giving instructions. The group of 86 women is very big for developing a teaching-learning process. It is of course very hard for one animator to give instruction to all end users. Nevertheless they realize an impressive job.

The supervisor Negewo, has a task in administration of monitoring data and paying present allowance to all end users (each beneficiary receives 15 birr per meeting; instructors receive 20 birr per meeting).

Everything is perfectly administrated.

#### Recommendations

1. Divide the big group of 86 beneficiaries into 4 groups; each group should be involved in a collective cooking course taught by the animator who gives instructions, starts discussions on e.g. cultural impact, habit change, economic effects, technical issues such as damage of the cookit, etc. The instructors support the animator by giving instruction to the individual end users.
2. Much more attention should be paid to the quality of the cookit, careful handling, keep the set complete, folding, and control of the fabrication of the cookit by PISDA management. This is guarantee for the sustainability of the cookit.
3. The instruction video (available January 2008) can be used during the meetings with beneficiaries.

#### *Water pasteurization and production WAPI*

All animators and 2 instructresses per kebele attended a workshop on water pasteurization. It is not a custom to make water healthy except sometimes cooking water on traditional fire for babies.

A first try out making WAPI's (Water Pasteurization Indicators) took place. C en N took all material for 130 WAPI's from Netherlands. The first results are moderate, some are leaking. But on base of experience the quality of WAPI's will improve. Negewo, supervisor, will be responsible for the production. Animators and instructors are motivated to make the WAPI's. They felt very proud to take a thermometer home made by them selves. One instructor (Genet) with a baby immediately made healthy water at home and measured the quality with the WAPI. N and C found in the market two appropriate water cans to be painted mat black and handed over to PISDA (a 3 litre kettle 70 Birr and a 2 ½ liter water can 48 birr).

#### Recommendations:

- Organize introduction water pasteurization as priority to mothers with young children and babies and pregnant women;
- Organize a special meeting with these mothers to learn the use of the WAPI for making healthy water;
- Buy water cans with lit (painted mat black) and teach women to keep the safe water in this can; don't teach water pasteurization in a saucepan.
- There are empty BIC's for about 130 WAPI's and enough Myverol, rings and fish threat. Start saving old BIC's. Take care of the mini-hole in each BIC; cut the BIC on or next to the mini hole.
- SCN will send some instruction guidelines for animators to be translated by PISDA in local language.

*Collective cooking and water pasteurization in a small group with 20 beneficiaries: a model*

For the film recording a model collective cooking and water pasteurization workshops took place. Animator Aster, supported by Abainesh was a teacher for this group in which she explained and instructed step by step the whole solar cookit process. Also an insulated basket was used. In one cookit water was pasteurized in a kettle and the WAPI showed after two hours that the water was safe. All beneficiaries could observe all steps Aster taught and afterwards they practised together and individually; Aster and Abainesh supported and gave instruction to the women.

The food was perfectly cooked and the quality delicious. The whole group had solar lunch together.

#### Recommendations

- In a small group the teaching-learning process can perfectly be integrated during cooking and water pasteurization;
- During the cooking process, there is enough time left to discuss many subjects concerning the cultural impact of this way of cooking, the technical, economic and environmental aspects, problems to be solved, etc.

#### *Supervision / refreshment course for animators/ staff, instructors*

For four animators, sixteen instructors, one supervisor a one day course took place. All women, one man took their cookit sets from home. The whole cooking process was practised and discussed. C invited on each step of the cooking process an animator (and sometimes an instructor) to teach and explain a special part of the instruction, also using the new solar cooking booklet, developed by PISDA.

Also water pasteurization was explained with the accent on the use of the WAPI. The insulated hay basket was explained by C and N and this (as always) gave a lot of discussion. The examples (photo's) of insulated hay baskets Uganda were also shown. Some women suggested to try out different materials to insulate the basket: such as cow dung!!, old rags and clothes, pillows or using grass, cotton rags, cotton materials, etc.

C. also showed pictures making a whole in the ground, insulated with stones, straw, etc and covered with banana leaves, straw and stones.

The food cooked was partly ready ( cloudy day).

#### Recommendations

- 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;
- Always pay much attention to the quality of the complete cookitset;
- SCN will write a short outline for animators as a guide to teach in meetings;
- Introduce the insulated basket as a very important means for cooking, saving fire wood and cow dung.
- SCN has doubts about th use of cow dung to insulate a basket.

## **VI Monitoring and evaluation**

Already a first evaluation took place in October 2007 (read evaluation report PISDA); monitoring about the use of the cookit is an ongoing process during meetings, which is very important.

On base of conclusions and new questions to be investigated a final evaluation and monitoring will be developed. Initiative will be taken by the General Assembly of PISDA.

The General Assembly considers this final evaluation after one year pilot project as their responsibility. The costs for this evaluation are paid from the PISDA / SCN/Wilde Ganzen budget 2007.

The suggestion of Mrs Janny Poley, Dutch Embassy, should be discussed to invite students of the Hoa-Rec-REn (Horn of Africa Regional Environmental Centre and Network) who could develop and realize a final evaluation.

This evaluation will also be very important for long term continuation on one hand and expansion of solar cooking and water pasteurization on the other hand. PISDA developed an application 2008 for SCN/Wilde Ganzen, Expectation is that continuation for 2008 is guaranteed, although the new revised budget still has to be accepted by Wilde Ganzen.

#### Recommendations

- Advise to invite HoaRec-Ren for final evaluation?
- Discuss proposal final evaluation questionnaire with SCN because of their experience in solar / integral cooking and water pasteurization;
- Include the use of the insulated hay basket as well as the fuel saving stove in the final evaluation;
- The final report by PISDA should be finished end February 2008 concerning decisions on continuation, upgrading and expansion solar / integral cooking and water pasteurization projects.

## **VII Project management**

PISDA carefully introduced solar cookits to 344 beneficiaries and arranged an introduction and follow up program in the four sites: Debre Zeit-09, Gerbicha, Gende Gorba, Kajima.

- The monthly meetings are fixed on special days, each month the same date.
- Food is cooked in the cookits; animators try to give instruction to this big group of 86 beneficiaries;
- On each meeting either Mr Gullilat (director) or Mr Markus (project officer) is present. Mr Gullilat is a very experienced teacher and he has a great influence on the beneficiaries encouraging them to use the cookit;
- During each meeting the animator monitors: frequency of using the cookit, food cooked. Administration is perfectly performed;
- All beneficiaries, per village 86, total 344, bought a cookitset for the subsidized price of 15 birr (PISDA buys the complete set from Bereket Solar for 85 birr).
- Each woman receives each month 15 birr for attending the meeting. This is a compensation for the fact that they are not able to go to the market this day to generate income. The supervisor Negewo administrates the fees and name of beneficiaries.
- Animators receive a monthly salary; instructresses receive 20 birr per meeting (transport and food). Animators make frequent home visits to check the use of the cookit and encourage women to increase the use, discuss and solve problems, instructresses support.

- The supervisor Negewo has mainly an administrative / organizational task and also the task of making home visits. These home visits require much time, most of the time walking to remote homes in the rural areas. In Debre Zeit a mini bus is possible for transport, sometimes a horse car but this transport is more expensive.
- Each Friday morning a meeting in the very small branch office (3x3 m<sup>2</sup>) takes place with the four animators, the supervisor and mr Gullilat. All experiences and problems are exchanged and discussed.
- Meetings and other organizational activities are realized by the supervisor and animator in close communication with mr Gullilat.
- Mr Gullilat communicates with mr Bereket about cookitsets, price, quality, distribution, components, transport. Bereket produces the cookit sheets and takes care of the complete sets. Bereket looks forward to transfer all material and some furniture to Debre Zeit; Gullilat is not yet convinced of this move. Bereket is ready to give instructions.
- Mr Gullilat is director, teacher, supervisor, manager, inspiring master, motivator, coordinator concerning the realization of the project in the four sites. He has a strong influence on the results realized so far. He operates from his office in Addis Abeba and also by weekly, frequent visits to the four sites combined with attending the monthly meetings. He also encourages the women and explains the environmental impact with his wise view and philosophic approach. It is obvious that mr Gullilat is respected by everybody and esp all beneficiaries, instructresses and animators.
- At the moment there is nobody who can replace mr Gullilat and this is of great concern to SCN;
- Communication with the head office in Addis Abeba also takes place by mobile telephone between PISDA Head office and Negewo. No internet connection between PISDA Addis and Debre Zeit Negewo.
- The small office is not in the centre of Debre Zeit but outside, furnished with one desk, 2 chairs and 2 small benches  
No PC, no telephone, no office equipments. Big enough for a meeting with maximum 11 persons.
- The transport means for everybody is very primitive: taking minibus, walking for hours and sometimes taking a horse car to remote villages.

#### Recommendations

- It is a first priority for further development of the project that in the centre of Debre Zeit an office is rented;
- For coordination, making programs, reporting, organizing meetings and trainings, fulfilment of local management a project coordinator in Debre Zeit has to be appointed. A function description should be there before starting an application procedure.
- Capacity of the animators and instructresses should increase. Their role as solar cooking educator, instructor and sales officer? (of solar cookits, hay baskets, etc) should be developed. They should form a strong training and marketing group in the perspective of business and care development.
- Cookitsets and esp cookit sheets are now produced in Bereket Solar workshop. Recommended is to set up a workshop for production of cookitsheets and making complete sets by women or men.
- Start production of insulated basket with different insulation and so different prices also in Debre Zeit, by women.
- Also sewing of cotton bags should be done by women to generate income.

- In one of these workshops WAPI's can be produced.
- Transport needs urgent attention: a pick up four wheel drive is necessary when the project becomes more large scaled (see application 2008).

## **VIII Promotion and public relation materials**

In 2005 Solar Cooking Foundation the Netherlands received an Award from Wild Geese and NCDO for their project in Eritrea. SCN proposed Wilde Ganzen and NCDO to produce an instruction film to be used for beneficiaries in different countries and a promotion film for promotion and fund raising activities in The Netherlands but also in the targeted countries. Because of the political instable situation SCN decided to postpone the film recording in Eritrea. In 2007 SCN developed together with film producer Lokaal Mondiaal, Arnhem The Netherlands, a scenario and plan of action for recording in Ethiopia, realized during the work visit of C and N in the village Kajima, one of the targeted solar cooking villages. Aster, one of the four animators has the leading role in both films. For the instruction film a list of detailed instruction steps for using the cookit and hay basket was set up; C and N will write the text for the voice over. Both films has a duration of maximum ten minutes each. In January Lokaal Mondiaal will invite SCN to discuss the first final version.

Related to this PR material SCN proposed a budget for a TV monitor and DVD player in 2008.

### Recommendations

- PISDA should develop a program for active promotion of solar cooking and water pasteurization activities in Debre Zeit region, for authorities and government representatives. Material: photo panels, film, cookit and insulated basket presentations, photo books, etc.
- PISDA should develop a promotion program for HOa REC-REN (Bart Jan van Beusekom) to be organized in communication with mrs Janny Poley (Dutch Embassy) and meetings and Ethiopian (NGO) conferences. (idem)
- PISDA should regularly use the instruction film workshops in the targeted villages as teaching learning material.

## **IX Networking**

This objective was intended to be very important concerning the sustainability and continuation of the project. Majority of the time was spent on fieldwork with animators, instructresses and beneficiaries: training, supervision, water pasteurization, evaluation.

C and N also considered meetings with PISDA director Ato Gullilat Aberra as priority and discussed all aspects concerning proceedings and problems to be solved as well as all details of the application form and budget 2008. Project program development will face a new approach the coming years in which an important objective will be the independency of NGO PISDA; also a more business like approach will get much attention together with the introduction of loan revolving funds and micro credit programs.

C and N had a meeting together with mr Gullilat, Mrs Janny Poley (Dutch Embassy) and Bart Jan van Beusekom (program officer HOa REC-REN – Horn of Africa Regional Environmental Centre and Network).

The following subjects were discussed: (see conclusions and names minutes of meeting Nov 13)

1. Fuel saving stove for injerra and also another design for daily use;
2. Jatropha introduction in the area of targeted villages PISDA/SCN project;
3. Long term solar / integral cooking program development;
4. Networking renewable energy for daily household cooking and business development;
5. Development high temperature solar injerra baking;
6. Start solar / integral cooking such as Jatropha with richer people.

A meeting was organized with Salem Vocational and technical Training centre. Mr Tecklay (Sasakawa) (Global 2000) explained C and N about the innovative activities on different subjects: technical, agricultural, bio gas, solar cookers etc. etc. (read documents).

C and N also have been introduced to mr Teshito Anado, director of African Association (SAA?). and mr Cherinet, Head agricultural department.

Many attempts had been made to make an appointment with NGO Hope Enterprise but it did not succeed. ISEE member Jan van Keulen, also visiting Debre Zeit and Addis Abeba, will investigate solar interest of Hope Enterprise. As soon as possible ISEE and SCN will meet to discuss further solar and integral cooking development in Ethiopia.

#### Recommendations

- 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. This initiative should be taken by PISDA because HOaREC-REN is a big organization (different African countries) and PISDA is small (for the moment one small area in Ethiopia).
- Women, end users and beneficiaries should be encouraged to start small business in Debre Zeit region by producing cookits, making cotton bags, construct insulated hay baskets, making WAPI's, all for selling and generate income.
- PISDA should take initiative together with Bereket solar to transfer all cookit materials and components to Debre Zeit. Bereket Dessie offered to give instruction to manufacturers of cookits.
- SCN will organize a meeting with ISEE to discuss ISEE connection with Hope Enterprise and interests in solar / integral cooking and water pasteurisation.

## **X Some scenario's for long term project development**

### PISDA project management and coordination in Debre Zeit

1. A strong, stable and active coordination point in Debre Zeit realized by a qualified woman; profile to be developed;
2. PISDA office annex trainings centre for min. 15 persons in Debre Zeit;

3. Workshop for production of cookits, WAPI' s, painting pans and cans;
4. The solar cooking centre also has a promotion and demonstration function with a storage for selling cookers, WAPI's, haybaskets etc.
5. Date of realization: March 1 2008.
6. Each year expansion of 450 families involved in solar / integral cooking project
7. Objective of PISDA remains: small scale project development in Debre Zeit area
8. Main PISDA office has a responsibility to communicate with SCN and acquisition of cookit materials such as aluminium foil

PISDA project in Debre Zeit region, other NGO('s) solar / integral projects in other regions

1. Investigate cooperation with Hope Enterprise, main office in Addis Abeba
2. Investigate Arba Minch Solar Initiative
3. Investigate cooperation with Salem Technical and Vocational Centre in Addis Abeba, such as developing a aluminium cookit, and high temperature solar cooker for injerra

Development of small business by women

1. Start up a workshop for production of complete cookit sets for selling;
2. Workshop initiated and developed by four women realized by micro credit funds;
3. Start up small business insulated hay baskets.
4. etc

Blaricum,  
The Netherlands

November 25, 2007

