

EVALUATION REPORT OF SOLAR COOKER USERS AND COOKER PERFORMANCE

FEBRUARY 2007 –JANUARY 2008

Purpose of the evaluation of solar cookers

- to collect and analyze data that helps to identify and correct the causes of solar cooker users' problems.
- to understand user behavior regarding satisfaction or dissatisfaction with their solar cookers and follow-ups.
- learning lessons from end-users of solar cookers that would enable SCA and SCN improve qualitatively on the product and services rendered
- to get feed-back on the consequences of solar cooker use on the environment, economy and health of users and their families.
- to gather information for a data base that can be shared with stakeholders
- to monitor progress

Level of satisfaction with solar cookers amongst solar cooker users

Village	Participants	Level
Kikokwa	100	2
	17	1
	200	3
	115	4
Ruharo	10	1
	40	2
	150	3
	110	4
Orukinga	243	3
	79	4
	98	2
Biharwe	5	1
	19	2
	247	3
	69	4

Level of satisfaction of solar cooker users

- 1: Not satisfied
- 2: Fairly satisfied
- 3: Satisfied
- 4: Very satisfied

Things liked about using solar cookers

<i>Things liked</i>	<i>Solar Cooker users</i>
Baking	3
Pasteurizing water	1457
Cooking food	1802
Making tea	10
Saving firewood	1350
Saving money	200
Taste of food	370
Cleanliness	15

All participants were happy with the taste of food cooked in a solar cooker

40% of the participants would like to fry meat using cooking oil in a solar cook kit but it is not possible except with a parabolic solar cooker. 20 said that they tried to cook cow hoofs but did not work out well in the solar cooker. 80 people reported that dry beans did not cook well but this was rectified when the beans were soaked in water during the night before cooking them in the morning on a solar cooker. 70 people failed to cook rice and on checking it was found that measuring proper volume of water was the problem.

150 women reported that they prepare baby food using a solar cooker. Baby food prepared in solar cookers was reported to be mashed potatoes, eggs, milk, drinking water, fish and vegetables.

The major difficulty 70% of the participants found is the little volume of food cooked in a solar cook-kit and its limitation of cooking only during sunny days only.

Family members cooked for using the cook kit

Solar cooker Participants	Number of people cooked for using a solar cooker
20	1
70	2
249	3
224	4
415	5
1030	6
10	8
12	9

Number of meals cooked in a solar cooker weekly

Solar Cooker participants	Number of meals cooked in a solar cooker weekly
12	1
120	2
724	3
694	4
480	5

Number of times a week a solar cooker is used

Solar cooker participants	Number of times a week a solar is used
12	1
120	2
724	3
694	4
480	5

Bad weather and certain types of food make it difficult sometimes for people to fully use their solar cookers, but hay baskets are solving some of the problems related to rapid change of weather during solar cooking and keeping food warm for night consumption.

All participants are now aware of the usefulness of hay baskets but so far only 350 participants have been able to receive the hay baskets.

800 participants said that there are days they use only solar cookers and no other cooking fuel. 300 participants said that on some days they cook two meals a day using 1 solar cooker

Number of people using the solar cooker to pasteurize drinking and bathing water
1675 participants use their solar cookers to pasteurize drinking water. Only 110 participants possess WAPIS. People use their hands to feel the heat and estimate that the water is pasteurized. Participants have said that the taste of pasteurized water is different the taste of non-pasteurized water.

People spend different amounts of money on cooking fuel according to the size of their families and the quality of cooking fuel they use. On average families spend Shs 10000 (about Euro 4) on cooking fuel per week in the absence of alternative cooking energy like solar power. When asked how much money is saved as a result of using solar cookers, many participants could not tell in monetary terms but could tell in terms of firewood lots not used. When we converted these amounts of firewood in money terms, estimate that an average family saves Shs 4000 per week (Euro 2). This is a lot of savings given the level of income of most people in the target villages.

Some women want to learn how to make bread and cakes as well as cunning fruits using solar cookers. The major benefit reported is that solar cookers save money and firewood. Health benefits have also been reported especially safe drinking water.

70% of the participants are of the view that the training seminars were adequate and 30% think that the training seminars were not adequate. Especially in the Orukinga, residents think that instructors do not spend enough time explaining to them. We think that the number of participants who are not entirely satisfied with our service is significant and that in the year 2008/2009, things will have to be improved so that people get more than one solar cooker and the instructors are more experienced to satisfy their customers.

We discovered that those who are not satisfied, did not adequately attend support meetings and did not talk to other solar cooker users to share information.

Many users complained of the pan covers which either too small or too big for their sauce pans. They requested covers of different sizes to fit different cooking pots. SCA and SCN resolved to make instead one standard cooking pots of 3.5 liters with a fitting cover to be distributed to all solar cooker owners in the year 2008/2009. This will solve the problem of pan covers.

98% of the participants use firewood as well and of these 40% use charcoal mostly at night when they want to cook indoors. In the trading centers, more charcoal is used. Participants especially in Orukinga collect firewood from the bush and few buy it. Free firewood is getting more scarce however and firewood sold is of poor quality and expensive.

An average family of 6 has been found to using about 120 Kg per week of firewood in the absence of solar cookers.

Instructors observed that most users value their cook kits and keep them well in the provided bags. But it was observed that many users need to be retold how to effectively use the solar cookers through organized group cooking. Many people put a huge volume of food in the saucepan which sometimes does not produce expected results. This is going to be solved when users begin getting a second solar cooker so that those with big families can subdivide the food to different solar cookers. We were happy to note that 98% of the users have positive attitude regarding renewable energy and that they intend to continue using solar cookers for the foreseeable future. However, many users need more follow-up support in the form of repainting the pans and covers, replacing old solar cookers with new ones and arranging group cooking sessions for the communities including socializing in the form of drama, exchanging experiences and seeing video solar cooker documentaries.

Lessons learned from these findings

The lessons learned from this year long field work are the following:

- The information got provides self criticism based on solar cooker user judgment about SCA activities.
- Solar cookers have demonstrated that they can be used to relieve pressure on the forests and improve the livelihoods of those using them adequately.
- Being a new technology, an effective follow-up has to be in place for a long time to support end-users.
- Many solar cookers users do not mention to the instructors the difficulties that they find in using solar cookers and some do not understand well instructions of user-manuals or hand-outs.
- We have discovered that many solar cooker users never bother to complain and some who complain do not get satisfied.
- The end-users who are satisfied with their solar cookers have been telling other people positively of the economic sense they find in using this new cooking technology.

Solution to lessons learned

- We shall continue accepting users to return unsatisfactory solar cookers and exchange them while striving to improve quality to ensure defect-free solar cookers.
- Encourage solar cooker users to complain so that SCA learn from their complaints and thereby earn their trust.
- We need to stress the importance of solar cooker quality and complaint handling to our staff.
- More than one cook kit per family is needed to cater for bigger families
- Follow-up has to be a continuous process.

Finally we have to compliment ourselves for reaching the targeted communities in the specified time-frame and enabling solar cookers to be part of household gadgets that are gaining acceptance.