

November 2012: An Analysis of Solar cooker Usage By Bashir Ahmad, Ph.D. Research Fellow, Technical University of Denmark. Why do some household users of solar cookers turn back to traditional cooking? Users should be more involved in technical development. The objective of the solar cooking technological change is to replace conventional stoves that are fuelled by environmentally non-sustainable, polluting, expensive, less available, and/or less hygienic energy sources. However, facts indicate that in households in which there is an option for conventional cooking, the interest in continued and regular use of solar cookers has declined. This happened even among direct target groups of the studied solar-cooker projects, where solar cookers were provided to the households free of charge or at subsidised prices. In the following, two case studies show some basic user aspect that led to the decline of interest in using solar cookers.

Solar Box Cooker in India In India, there has been a national solar-cooker program since the beginning of the 80's. To date, 400,000 Indian-produced solar box cookers have been sold, of which 40,000 were sold in Gujarat. However, more than 50% of the urban households that have acquired a box solar cooker several years back have discontinued using their solar cookers for daily cooking. This was the conclusion of the study that I carried out in 1997. I visited households and interviewed 20 urban families in Gujarat State and in Madras to figure out why their interest in the technology had declined. The main reasons were:

- When a child in the family gets hungry, for example, around 10 - 11 a.m., one could not wait one or two hours for the rice to be cooked.
- The only area with constant sunshine that is available to the family is the roof. The housewife tried several days going up and down to cook with the solar cooker, but she finally got tired of going up and down, so solar cooking was discontinued.
- The family was not in a position to plan and prepare the raw food for the lunch already about 9-10 a.m.
- After the solar cooker broke, the family discontinued solar cooking because they were unable to get it repaired.

Parabolic Solar Cooker in Burkina Faso

Between 1977 and 1981, the Danchurchaid from Denmark constructed, distributed, and tested 250 parabolic solar cookers in Burkina Faso. Here, also, most of the users turned back to traditional cooking methods because:

- The design of the solar cookers did not allow a convenient stirring during cooking the basic meal, a heavy porridge.
- Women preferred to cook indoors to avoid strong sunlight.
- Women could not carry their cookers with them to the fields where they worked during the day.

The Problem

The problem is that the cookers are not compatible with ordinary everyday real-life situation of the user family. To discuss the background, one can roughly say that when the solar cookers were taking form as a cooking device in their design phase, the implications of ordinary everyday use conditions of users had not been adequately incorporated in the design.

Later, after the users put the solar cookers under ordinary use, the users experienced the actual benefits and requirements of their cookers. Here, individual users carried out use-value evaluation of their cookers. In the evaluation, the real-life situation normally decides which cooking option is the most suitable. The shift of solar cooker users to traditional cooking methods reveals that the solar cookers have been given less use-value by their users.

User as Important Partner

Therefore, it is necessary to have a clear understanding of the users and their ordinary use situations. Considering the fact that it is not easy to know the details of ordinary use situations, before the users have tried them, one can ask how to incorporate the use-value aspects in solar cooker projects. In a technological project such as the design and dissemination of solar cookers, a number of representative users (among the target group) could be involved in the development and implementation phases of solar cooker projects from the start. As the project develops, and the users experience the solar cookers in their real-life situations, collection and incorporation of feed-backs from the users will be important input for the improved designs of solar cookers.

More Information: Bashir Ahmad, Dept. of Building & Energy, Technical University of Denmark Bldg. 118, DK-2800. Ph: +45-45251928, fax: +45-45934430, e-mail: ba@ibe.dtu.dk.



Solar box cooker with happy every day users in Gujarat, India. Photo by B. Ahmad.