

Lasting Impacts of a Solar Cooker Project in Bolivia
By Melanie Szulczewski, Ph. D.
Solar Household Energy, Inc.
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Under the auspices of the French NGO Bolivia Inti, alternative energy experts David and Ruth Whitfield introduced solar cooking to many villages in Bolivia between 2001 and 2003. After demonstrating solar cookers in public forums, they then trained those people expressing interest in how to make and use solar cookers.

Research was conducted in the central highlands of Bolivia in 2005 to assess the continuing impacts of solar cooking on participants of these solar cooking courses conducted by the Whitfields. The researcher, Chris Pell of the University College London, interviewed 170 people with and without solar cookers to determine whether their use affected household fuel consumption.

The data showed that 92.7% of the solar cooking course participants continue to use their solar cooker three to five years after the course ended. In fact, 62.4% of all participants use their solar cooker at least once a day during the dry season, demonstrating a lifestyle change that incorporates solar cooking into their daily lives. The solar cooker now supplements their other energy sources: gas, wood, or a combination of gas and wood.

Solar cooking provides numerous advantages, including health, environmental, and economic benefits. For families in developing countries, the strongest of these may be the economic benefit of buying less fuel for their other cooking methods. Pell found that there was a significant difference (at the 95% confidence level) of the monthly fuel expenditure per household member between families with a solar cooker and those without one for those households, which purchase but do not forage for their fuel wood. Households with solar cookers spent an average of \$5.95 per household member per month in the dry season and \$6.70 in the wet season, while households without solar cookers spent an average of \$9.94 in the dry season and \$10.39 in the wet season. This demonstrates a savings of \$3.99 per month in the dry season and \$3.69 in the wet season. These families reduced their fuel expenses by 40.1% and 35.5% in the dry and wet seasons, respectively.

Further analysis of the data reveals that the more the solar cooker is used, the lower the monthly fuel expenditure per household. This confirms with statistically significant results the direct link between using solar cookers and reducing fuel expenses.

Although both the seasonal and daily frequency of solar cooker use varied greatly among households, it is clear that its advantages have caused over 95% of participants to continue to use their solar cookers years after their initial training. This resounding acceptance of solar energy as an alternative fuel provides numerous benefits, including statistically significant savings in fuel expenditure, a reduction in the inhalation of toxic smoke and of the environmental degradation due to the consumption of fuel wood.