

# **Testing and Modification of Sun Buckets for Household Cooking and for Agricultural Purposes**

Hin Lyhour

*Faculty of Agricultural Engineering, Royal University of Agriculture*

## **Abstract**

In the event of wood scarcity, rural farmers find it hard to collect enough wood for cooking. Some resort to buying extra LPG to meet household demand for burning. This situation even worsens, when farmers encounter labor shortage because some of their family members choose to work in the industrial sector instead. As a result, women, or children, are mostly responsible for gathering wood, and this tends to reduce amounts of time they need for farming or other business. To solve this problem, the use of sun buckets for cooking and for agricultural purposes should be initiated to transform sunlight to energy. This idea is quite new in Cambodia; however, it may be beneficial for rural people who cannot afford to pay for LPG and at the time that LPG supplies are rarely available in remote areas. The objectives of this study are to introduce sun buckets and test their performance, to modify sun buckets suitably for the local conditions, and to utilize these tools for agricultural purposes beyond cooking. After completing this research in a three-year period, it is expected that sun buckets may play a major role in providing enough energy sources for household cooking and for agricultural advantages; besides that, this innovative may be suitable for Cambodian conditions after alteration. More specifically, these sun buckets may be used in conjunction with solar dryers to supply heat at night, for egg incubation, or hot water treatments of vegetables and fruit. Widespread application of sun buckets is not easy because these products will be little known in Cambodia, only at research level. Therefore, to ensure sustainability, a group of selected farmers will be trained for effective use, while students will work closely with the project to devise a prototype suited for Cambodian conditions. For wider impacts on academic research, this study will be published in several international journals to gain attention and for more development.