**Help 250 Ethiopian Women become Solar Entrepreneurs.**

**Creating Self-Sustaining Micro-Enterprise for Women**

**Mission**   
The purpose of these programs is to alleviate poverty and enhance the quality of life throughout rural Ethiopia by empowering the hard-working poor rural women to raise their standard of living through self-sustaining micro-enterprise called Solar Bakeries.

These bakeries utilize the ultimate renewable resource, sunshine, to cost-effectively cook needed staple food bread in the village while combating the destructive forces of deforestation.

**Objectives**   
1) Establish Solar Bakeries in selected rural districts in three regions in Ethiopia including Addis Ababa, Amhara and Oromia regions

2) Solicit funding from bilateral and

2) Use a portion of the proceeds from the initia2)l Solar-Bakeries to fund expansion into additional locations on a self-propagating basis.  
3) Train unemployed STEM graduate and local women to empower themselves through the establishment of self-sustaining micro-bakeries.  
4) Empower youth and women owned businesses in selected districts in the three regions which would utilize training, technology and equipment jointly provided by STEM Synergy and other NGO’s, businesses and donations.  
5) Use solar energy to prevent further deforestation from creating continuing irreparable ecological destruction in line with the government policy.  
6) Create job opportunities for 5 to 10 people at each bakery location.  
8) Acquaint communities with the environmentally friendly concept of solar cooking.  
9) Improve the general health of women and children by eliminating significant amounts of smoke, they customarily have in their eyes and lungs, while cooking and baking.  
10) Reduce the time-consuming task of searching for and collecting wood for cooking and baking fires, done mostly by women and children, which places them at increased risk for accidents, rape and abuse.

**Women determining their own destiny – with sustainable micro-enterprise – using the Solar-Bakery as the vehicle to bake the bread and lead them out of poverty!**

**Implementation Process**  
Using supervisory personnel from reputable organizations and universities already resident in Ethiopia, identify “entrepreneurs” from local villages to establish bakeries. Each bakery will bake bread, cakes and pastries for sale in a specified for villagers. These entrepreneurs will be trained in basic business management skills and specific solar bakery management techniques.

**Work with each entrepreneur to:**   
1. Develop a customized marketing and distribution plan for their region.  
2. Establish and monitor cash flow and profit objectives for their location(s).  
3. Outline a growth plan to allow an increase in sales and profits.  
4. Develop appropriate human resource policies that will enable the bakery employees to improve their standard of living.

**Equipment**  
Each bakery will be equipped with a solar collector and an oven box that will increase the temperatures in excess of 500° F / 260° C. This oven is specifically designed for developing-world bakery operations and has an effective life of at least 20 years with appropriate maintenance. Each location will be equipped with a 150-piece Sun-Bakery package, which includes:  
4 durable bread pans, 4 cake pans, 2 heavy duty rolling pins, 1 large oven peel, 2 dough scrapers, 6 hot pads, 1 rugged insect-proof flour bin, 1 wire whip and 2 large mixing bowls.

The Solar-Bakery package can be customized to fit the specific types of baked bread consumed in the country

**Business Planning**   
The Solar Bakery business plan will conservatively allow (within 2 years) an initial investment of 20 Solar bakeries, to grow to accomplish the following:  
– Have Solar -Bakeries operating in over 20 locations.  
– Create 20 new businesses, which will be owned by locally youth and women  
– Have created over 1,000 paying jobs for needy persons.  
– Be generating annual gross revenue of over $10,000 for newly created businesses.  
– Generate total (2 year) gross revenue of over $20,000.  
– Bake 1,000,000 loaves of fresh bread in a year  
– Have saved a total of over 500,000 tons of firewood.  
– Acquaint hundreds of thousands of people with the concept of solar cooking.  
– Generate over $50,000 towards the self-propagation of more micro-enterprise sun-bakeries over three years  
– Have helped to reduce the incidence of lung and eye diseases among women and children.  
– Have helped to alleviate dangerous and time consuming chores of finding and collecting wood by women and children.  
– Have helped to reduce the harmful effects on our atmosphere, by the smoke from thousands of wood-burning fires.

**Program Description**   
The Sun-Bakery Program will establish, equip, train and implement self-sustaining bakery enterprises in selected districts in Ethiopia. Each of these bakeries will employ 10 to 20 people to prepare, bake, sell and deliver bread which have been baked in a solar oven.

These bakeries will self-fund growth to enable expansion into hundreds of additional locations. Each Sun-Bakery will fill the need for fresh, locally prepared bread and other baked bread.

Currently, in many rural areas and small towns bread must be delivered to rural areas from larger cities. This delivery increases the cost of the bread. Due to the distance of the bread makers from rural villages, there are days when bread is not delivered and the bread is typically not fresh. The bakeries will be located in the market area they serve; this will reduce the delivery expense and allow fresher baked bread to be provided to the consumer. The closer location of the bakeries to the markets served, and the use of the sun as the primary fuel source, should allow baked bread to be sold to the ultimate consumer for 25% less than the current prices.

Each bakery can provide baked breads for up to 250 customers. The proposed bakeries will be able to be located in areas that will have a need for baked breads without posing a serious threat to any established bakery operations. The jobs that will be created will help the local economy of the villages in which each bakery is located, by keeping more money in the local area.

The primary source of energy will be the sun. Hand mixers will be on hand to allow for dough and batter preparation when power is not available.

The single biggest threat to Ethiopia’s ability to grow and prosper is deforestation. The demands of massive population growth and the inefficient conversion of wood to charcoal, have outstripped the forests ability to regenerate. Science strongly supports the fact that deforestation is changing weather patterns, causing soil erosion and depleting plant and animal life. Currently, much of the baking in Ethiopia is done in ovens fueled by charcoal. The inefficient conversion of wood to charcoal is one of the leading causes of the ever-growing deforestation problems. The use of an oven powered by the sun will allow for enormous volumes of baked bread to be prepared without further damaging the already fragile environment. Even in the cities, gas is sometimes used to power ovens, and utilizing the free energy of the sun will help to decrease the need to import cooking gas and will contribute in a positive way to the country’s balance of trade.

Deforestation is the gravest environmental crisis facing the world today. Its far-reaching effects include:

* The decreasing availability of firewood.
* Removing the trees from an area is to remove its source of life.
* Forests protect the soil against erosion and reduce the risks of landslides and avalanches.
* Forests increase the rate that rainwater recharges groundwater as well as control the rate that water is released in watersheds, helping sustain freshwater supplies.
* Forests affect the climate. The occurrence and strength of floods and droughts increase when they are eliminated. \* Forests are an important source of oxygen.
* Forests store large amounts of carbon that are released when trees are cut or burned.

If deforestation is not reversed, there is little hope that negative environmental and economic trends that have restrained growth can be reversed. A major environmental rehabilitation and reconstruction process must begin immediately. This process cannot begin if every tree that is planted is not allowed to grow to maturity. When people are taught to use the solar resource they have in abundance, other positive environmental and economic changes will be effective.

The Sun-Bakery Program will combine training and business development to provide solutions to the growing problems of deforestation and global warming through economic empowerment. Every tree that is allowed to remain in place will help future generations. Every person who gains entrepreneurial expertise will contribute to improving the quality of life for themselves and the greater community of their country.