

**Harnessing solar energy- the abundant natural gift of God for Africa-for food processing**

*Dear Friends,*

Greetings from friends and communities in Liberia whom you have prayed for and keep supporting in various ways! I also bring you greetings from my family and friends in Ghana.

During my air travels, I usually spend time reading the in-flight magazines. On a Kenya Airways flight in March 2009, I was attracted to an article on “Solar Power-The Continent of Light” in the Edition 66 of Msafiri Magazine. In that article, Cosby Menzies, the Director of Solar Cookers in Africa argues that “with more than half the world’s concentrated sunlight, Africa is in a fantastic position to take advantage of solar technologies”.

Coincidentally, on that trip, I was in the company of two volunteers, Ed Galle and Dick Fulmer of Compatible Technology International (CTI), MN. They had brought with them from the US, a solar cooker which we demonstrated during our visits to the communities. We were on the trip, principally, to introduce CTI’s Omega VI grinders to communities in Liberia, especially those that had benefitted from UMCOR’s training and were growing Moringa and willing to try appropriate methods of milling dried Moringa leaves

into powder for purposes of improving nutrition in their respective communities. I showed the article to my two colleagues and during the very successful trip, we also discussed the issue of exploiting the energy of the sun for drying of vegetables and fruits as, often, the biggest problem faced with the African farmer is not in the production of the crop but in its preservation. We believed that using a simple solar dehydrator will be the most cost effective way to preserve a variety of crops. We decided to take up the discussions further and to get CTI to design a solar dryer to be tried by farmers in West Africa.



*The framework and back view of the solar dryer.  
Ed Galle (far right) instructs Fallah Saah (red shirt)  
and Barwain Zayzay (yellow shirt) on construction techniques*

**Activities undertaken during visit of May 2010 to Liberia**

As a direct outcome of the inspiration from reading the article on “Solar Power-The Continent of Light” in the Kenya Airways flight in March 2009 and my discussion subsequently with Ed Galle and Dick Fulmer, the two CTI volunteers, we decided to try building solar dryers in Liberia in May 2010 together with volunteers from communities UMCOR has been associated with over the years.

On arrival in Liberia on May 16, 2010, the team (myself, Ed Galle and Dick Fulmer) met with Reverend Benjamin Bangura and Barwain Zayzay (the two are Liberian agriculturists working for the Liberia Annual Conference of the United Methodist Church) to make final plans towards activities to be undertaken in Liberia during our 10-day stay. We decided on the construction of two solar dryers in two different locations-Upper Cardwell (Montserrado County) and Falie (Grand Cape Mount County) respectively. We also had in our possession 10 Omega VI grinders donated to UMCOR by the Le Sueur United Methodist Church for a microloan program in Liberia. As part of our overall program in Liberia during this visit, we also trained about 50 farmers from 4

communities in the use of the grinders and passed on the grinders to them on a microloan scheme. Each grinder costs \$400 and the communities agreed to pay back within 6 months. Once payment is made, additional grinders will be procured and passed on to other needy communities thereby creating a revolving loan scheme which could be sustained over the years.

### ***Outcomes of Trial in the construction of CTI designed solar dryers***

Ed Galle, first of all, provided a material list, which was used for the purchasing of the materials. Mr. Jim Perry of the Edenton Street, United Methodist Church, Raleigh, NC, was available in Liberia at the time and supported the purchase of materials on behalf of his Church and the Agricultural sub-Committee.

The construction process of the solar dryers involved first of all an understanding of the design of the dryer. Ed Galle who designed the dryer took the volunteers who wanted to learn about the construction and functioning of the dryer through an interpretation of the design. Fallah Saah, who has carpentry skills, led the session on interpreting and explaining the design to his colleagues and requested the cooperation of all. It took 3 days to complete the construction of the first dryer in Upper Cardwell.



*Barwain Zayzay (left) and Fallah Saah with front view of Solar dryer. Barwain is holding the door to the dryer. Fallah has gained expertise in the construction of the solar dryers*

Fallah Saah had however developed expertise as he worked very closely with Ed Galle and this helped to reduce the construction period of the second dryer in Falie to two days.



*Ed Galle designed the dryer. He inspects the dryer after the construction. Back view of solar dryer with the UV resistant plastic film which collects the energy of the sun into the dryer and circulates this through the trays to dry vegetable or fruit*

The trays of the dryer were filled with Moringa, which had earlier been washed clean. It took six days to get the Moringa dry very well and this was due to the fact that the period was completely wet with daily torrential rains. It is of interest to note that apart from plastic sheet that was procured from the US, all other materials were available locally. The cost per dryer as built is about US\$600 and we will look forward to your support in assisting communities in Africa to use this wonderful gift from God-the energy of the sun to preserve vegetables, fruits etc that are otherwise lost after harvest.

***Please pray for me***

The use of solar energy for food preservation is another new innovation of the Sustainable Agriculture and Development program of UMCOR for which I provide leadership in Africa as your Missionary. Just like the other innovations of Moringa, Soy, Beekeeping etc that the program introduced to the countries of Liberia, Sierra Leone, the Democratic Republic of Congo etc, the introduction of solar dryers provides great promise in strengthening rural communities and revealing God's presence in mission. Do please keep me in your prayers especially for God's protection, wisdom and good health.

- There is already a great demand in Liberia and also in Ghana for the introduction and use of the solar dryers so there will be the need to build some more of these units in some communities, especially those that have been involved in the production of Moringa
- Ed Galle and Dick Fulmer, the two CTI volunteers will not be able to return to West Africa this year but have indicated that they could return early next year. We request for prayers to God to keep them in good health for the trip together next year
- There are also plans to recommence visits to Jalingo, Nigeria to conduct farmer training similar to what has been achieved in Liberia, Sierra Leone, DR Congo and Ghana. These have not yet been concluded

My family is doing pretty well. My wife is ready to support my work further as she has done in the past by providing training in nutrition and introducing Moringa and Soy to the several communities in the 5 countries or any new Conferences of my ministry.

Makafui has completed the BSc. Architectural program in the Kwame Nkrumah University of Science and Technology, Kumasi and will complete the one-year National Service before going back for the postgraduate program

Toni and Selma are home for the long vacation. Toni will enter the final year of the 4-year program of the Senior High School and Selma goes to the 3<sup>rd</sup> year in September 2010.

Thank you for your continued support through prayer and giving.  
God richly bless you, your families and congregations.

In His Service,

Mozart Adevu

*To support me as a missionary, my advance number is 13996Z*

*To support my program in Sustainable Agriculture and Development, the advance number is 982188*