



**DAVIS Peace Proposal, Wartburg College**  
**Maxwell Chinnah, Megan Weichers, and Godwin Attigah**  
**Project Solaris**  
**June 2015 – August 2015**  
**Ashanti region, Ghana**

### **Mission**

In many African countries, Ghana included, there exists an ever-growing dependence on the use of charcoal, firewood and fossil fuels for their day-to-day cooking. According to the World Health Organization (WHO) more than 1.6 million people die from in-house pollution as a result of their dependence on firewood and fossil fuels for their cooking fuel<sup>[1]</sup>. Utilizing firewood also poses a huge threat to the security of the local community as their kids could be kidnapped, raped or killed when going to fetch firewood in the forests. Not to also mention the hazardous effects that the burning of firewood have on infants and expectant mothers and also on the environment and climate, by extension.

Members of this team have a special connection to these issues because these affected areas are their homelands. Therefore Project Solaris is aimed at addressing the aforementioned threats to the environment and security of the local inhabitants of the Ashanti region, Ghana. It also addresses the situation of massive deforestation that is engendered by the ever-increasing use of firewood.

It has been estimated that 60 percent of the unemployed in Ghana are youths (between the age bracket of 15 and 24)<sup>[2]</sup>. Thus, Project Solaris also aims at not only empowering these youths educational but also incite a sense of purpose to be social responsible young adults and contribute positively to their community.

### **Project Description**

The proposed model of Project Solaris is hinged on the construction of a unique model of solar cookers, called 'Solar box cookers'. A solar cooker is a device that utilizes sunlight as an energy source in order to produce heat energy. It does not make use of fuel and cost nothing to run after it has been constructed. This project will focus on building the solar box cooker. Mr. Chinnah and his team have constructed a prototype hybrid solar cooker that will be able to function day and night. This prototype model of the solar box cooker will make use of a battery, which will enable it store energy that could be used at night for cooking, so it will be able to last for 3.14 hours without sunlight.

This prototype model utilizes 100% renewable energy; and hence, a much safer and reliable cooking alternative than the usage of fossil fuels, which are harmful to the environment. This proposed cooking apparatus will be able to generate more than the typical amount of cooking heat (about 1500 watt-hours/day) used by a family of eight.

### **Objectives (How)**

Mr. Chinnah and his team are determined to train unemployed youths in order to acquire the necessary skills needed to build the proposed solar box cookers for their local community. There are two main phases involved in the execution of the Project Solaris:

- 1) The Pilot Phase - This entails collaborating with the Youth Empowerment Synergy (YES) in Ghana to provide a minimum of 50 youths for training on the intricacies and process of constructing the prototype solar cooker model. Then progress will be made to purchase the materials needed for the construction of 50 solar cookers. Mr. Chinnah and his team will charge a fee to the people for testing the use of the solar cooker. This fee will only be equal to the cost of the materials, which will be \$225. Although the team has decided that the fee is necessary for the continuation and replication of the project in other regions, it will not be

equal to the price that will eventually be charged for the product, because the product is still in the pilot phase.

- 2) The Successive Phase - This second phase is contingent on the success of the pilot phase. This phase will put to the test, the youths' abilities to construct the proposed model of the solar cooker that will be distributed to the local community. After the construction and distribution of the 50 solar cookers, Mr. Chinnah and his team will obtain feedback from the local users through surveys and observation of how the cooker functions. From the data gleaned from testing and verification, necessary modifications will be made. Thus, yielding in an improved model. The next step will be to duplicate this project in other regions in Ghana, and in West Africa as well.

The success of this project is contingent on and will be measured by the successful completion of the pilot phase mentioned above. The overarching goal of this project is to address, if not completely reduce, the increasing dependency on fossil fuels that is now posing a dangerous environmental concern of deforestation.

### **Timeline**

The timeline for the pilot phase is set to begin the production of the cookers in June of 2015 with about 3 months of testing and modifications before producing the product on a large scale. The production of the cookers is expected to last three to four weeks, or most of June. For the remaining duration of the project, July and August 2015, the community will test the cookers. Necessary modifications to the cookers will be made throughout this time based on the feedback from the community.

### **Expected Outcomes**

After the successful completion of the pilot phase, Mr. Chinnah and his team intend to collaborate with the heads/proprietors of the administration of Science/Technological High Schools in the district, in order to orchestrate an Annual Renewable Energy Competition. Successful students will be judged on how functional and innovative their solar cookers are. Furthermore, Mr. Chinnah and his team intend to put this idea forward to the Ghanaian government in order to establish a Renewable Energy Scholarship Foundation geared toward providing high school students who are successful in the Annual Renewable Energy Competition with scholarships toward their education.

This project has the high promise of a huge potential impact over time, as the 50 youths will go on to reproduce and sell more of the solar cooker; thereby, empowering them to actively engage in social entrepreneurship. Consequently, this will impact the region by empowering unemployed youths and generating revenue.

### **Team Members**

Originally from Nigeria, Mr. Chinnah (CEO/Co-founder), a Computer Science major and Graphic Design minor, has realized that the skills being learned can be applied in ways to foster development and facilitate advancement not only in his country. Also, his experience as a campus representative for the Clinton Global Initiative at Wartburg College has given him a platform to be able to motivate and help other fellow Africans. His role is the visionary and team manager. He is the co-designer of The Genesis Cooker.

Godwin Kojo Attigah (CTO/Co-founder) was born in Accra, Ghana. He studies Computer Science as major and Business Administration as a minor. His role includes working on modifying the current prototype.

Megan Weichers (CFO/Co-founder) was born in Waverly, Iowa. She is currently a Business Administration major at Wartburg College. Her role is to perform more research on the target market and to also organize the budget and financials.