

# GHANA SE4ALL NEWS

## In this Issue

- ◆ EnDev Success Stories Continues
- ◆ "Obaatan Boafu" Campaign for the Adoption of Improved Cookstoves Launched
- ◆ SE4ALL Ghana Identifies Opportunity for Collaboration with China Geo Engineering on the Aveyime Irrigation Scheme
- ◆ First Training Workshop on "Manuals and Tools for Promoting, Financing and Advising on Solar Powered Irrigation Systems" Organised in Tamale
- ◆ Profiles of Improved Cookstoves Producers Continued

## GHANA'S SE4ALL ACTION AGENDA SEEKS TO:

- > Promote Productive Uses of Electricity
- > Improve Access to Improved Cookstove
- > Improve Access to LPG for cooking
- > Provide Access to Electricity for Remote Communities Using Off-Grid Systems

## PROGRESS ON HIGH IMPACT PRIORITY AREAS

### PROMOTE PRODUCTIVE USES OF ENERGY

- \* The GIZ led Energizing Development (EnDev) Project success story continues with the project seeing further increase in its cause to support the agricultural sector through the provision of grid connected irrigation schemes. Number of farmers with support from the EnDev project have increased from 79 to 123 as at June 2016. Out of the supported 123: 61 were practising manual irrigation (classified as farmers with new access to energy), 26 switched from conventional diesel or petrol pumps to electric pumps, and 36 were using shared electricity.
- \* Under the improved cookstove component of EnDev Project managed by SNV, 292 gari processors in six districts have registered for improved cookstoves. 281 of these agro processors are being appraised by various Financial Institutions for loans. The remaining have made full payment for the stove installation. Total number of woodstoves installed to date is 79.

### IMPROVE ACCESS TO IMPROVED COOKSTOVES

- \* The Global Alliance for Clean Cookstoves (GACC) and the Accra-based Ghana Alliance for Clean Cookstoves (GHACCO) have launched a new campaign to help change the way people cook.

In Ghana, about 72 percent of the population still rely on solid fuels like wood and charcoal as their primary cooking energy source (Ghana Living Standard Survey 6 report). The use of solid biomass in inefficient stoves produces harmful emissions which could result in household air pollution and associated negative health impacts. Also, the unsustainable exploitation of woodfuel for cooking contributes to deforestation and forest degradation, and climate

## Contents

### Progress on High Impact Priority Areas 1-2

- \* Promote Productive Uses of Energy
- \* Improve Access to Improved Cookstoves

### Visit to Aveyime Irrigation Scheme 2-3

### "Manual and Tools for Promoting, Financing and Advising on Solar Powered Irrigation System" Developed by GIZ 3-4

### Profiles of Improved Cookstoves Producers (continued) 4-5

- \* Man & Man Enterprise
- \* Trees for the Future

variability.

The campaign for improved cookstoves, dubbed "Obaatan Boafo" or "Mother's Helper" will encourage urban and peri-urban dwellers who depend on solid biomass for cooking to switch to improved cookstoves that burn fuels more efficiently and effectively. As a result, the improved stoves can help cut smoke emissions, reduce the amount of money people spend on cooking fuel and also protect the environment.



**Arijit Basu, Regional Director, GACC (front -row, middle) and key dignitaries at the launch**

A launch event held at the Efua Sutherland Park kicked off the three-month campaign and brought together leaders in the cookstove sector in Ghana including the Energy Commission, Ministries of Power, Gender and a number of development partners including SNV and KfW. The event was also attended by some local manufacturers and importers of improved cookstoves and a group of Women Cookstove Advocates, who embarked on a community door-to-door activation as part of the campaign.

Through the Obaatan Boafo campaign, the Alliance is encouraging people to save money on fuel costs, reduce the amount of time spent cooking and fuel gathering, and also to protect the health of their families by using

cleaner, healthier cooking methods," said Doris Duodu (who represented the Director for Renewable and Alternative Energy, Ministry of Power at the campaign launch).

The campaign focused on the message 'Cleaner, Healthier, Easier Cooking, Every Day,' and had three key components:

- \* The Women's Advocacy Campaign,
- \* The Community Market Activations, and
- \* The Radio Awareness Campaign.

As part of the campaign, the advocates would visit homes within their communities and several urban markets during road shows and market activations to raise awareness and increase knowledge amongst the target audience on cleaner cooking solutions, their importance and benefits.

The advocates would encourage women to register for an "improved cookstove hotline" so they can continue to receive information about the benefits of cleaner cooking through their mobile phones.

These market events would also be an opportunity for the public to purchase improved cookstoves at special rates. The campaign will also be implemented through radio talk messages and programmes to educate the public on benefits of adopting improved biomass stoves.



**Improved cookstove market activation**

GACC and GHACCO have been involved in a number of activities in Ghana for the adoption of cleaner, more efficient cooking practices.

The GACC is also partnering with World Education International to develop an educational curriculum that schools can use to teach

students about the benefits of cleaner, more efficient cookstoves and fuels.

**Learn more about the campaign by contacting Christian Osafodaa: [cosafa@cleancookstoves.org](mailto:cosafa@cleancookstoves.org)**

## VISIT TO AVEYIME IRRIGATION SCHEME

A team from the SE4ALL secretariat consisting of Ebenezer Ashie, Projects Advisor and Michael Abrokwa, Programme Assistant; and the Renewable Energy Technology Transfer (RETT) Project secretariat comprising Eric Antwi-Agyei, Project Coordinator and Kwabena Danso, Technical Officer on the project; and a delegation from the Ghana Irrigation Development Authority (GIDA) visited the Aveyime Irrigation Scheme in June 2016.

The aim of the visit was to ascertain the techno-economic viability of integrating solar PV into an existing grid connected irrigation scheme in Ghana.

The Aveyime rice project as its name suggests is an irrigation scheme with the aim to boost the growth of local rice in the country. It is located in Aveyime- Battor in the North Tongu District of the Volta Region. The scheme however faces crises every now and then due to the escalating electricity bills farmers have to pay to enable them irrigate their farms.

This bill situation was temporarily resolved but the scheme collapsed once again in 2011 due to the scheme inability to pay their indebtedness to the Electricity Company of Ghana leading to the disconnection in the supply of power to the site.

Addison Farms, a private farmer who has the aim of making these farmers his out growers paid the current debt. Addison Farms has 150 Ha of land of which only 59 Ha is farmed as at June 2016. Irrigation is done through a pump

house which is owned by Ghana Irrigation Development Authority (GIDA) and then flows by gravity through opened valves and canals to the farms. Water source is a tributary from the Volta River.

In the face of the challenge of high electricity bills, the China Geo Engineering Cooperation (CGEC) a subsidiary of the China Energy Conservation and Environmental Protection Group who deals in construction and have been operating in Ghana since 1997 decided to invest in a \$300,000 Solar PV System (of 50 kWp capacity) to substitute grid electricity at the pump house.

A fee was yet to be agreed with the farmers who usually make a contribution of Gh₵1000.00 per Ha annually. CGEC hopes to provide energy at a tariff that is at least 40% cheaper than power from the grid.

The SE4ALL Secretariat and RETT team intend



**Sun Liang, Project manager of China Geo Engineering Corporation taking the team through the operations of the company**

to work with GIDA and CGEC to come out with an appropriate business model which will be a win-win for the service provider and beneficiaries, and is sustainable. The SE4ALL team will also help to address some of the technical issues identified during the visit such as



**GIDA Irrigation Pumping House showing the Manager-in-Charge**

how to introduce net-metering and install grid interactive inverter at the site.

The workshop was opened by the Component Manager, Mr. Samuel Adoboe who briefed the participants on how this training came about.

The GFA Consulting Group consisted of Christine Fröhlich, a financing expert who has several years of experience in microfinance and is now a trainer; Andreas Hahn, a Chemical Engineer who has a decade's experience in solar technology; Tarek Keskes, an Electrical Engineer; and Lennart Woltering, an Agricultural Irrigation Expert.



**Samuel Adoboe, EnDev Component Manager introducing the project and the consulting group**

### **“MANUAL AND TOOLS FOR PROMOTING, FINANCING AND ADVISING ON SOLAR POWERED IRRIGATION SYSTEM” - DEVELOPED BY GIZ**

GIZ Ghana collaborated with GFA Consulting Group under the “Powering Agriculture” programme to organise the first training workshop on “manuals and tools for promoting, financing and advising on solar powered irrigation systems (SPIS)” in Tamale, Ghana from the 3-6 May 2016.

The objectives of the workshop were to:

- \* train participants in SPIS installation: theory and practical,
- \* test run a manual on the introduction of SPIS as a technology option to sustain and increase agricultural production, and
- \* share experiences and receive feedback on the manual and its relevance.

The training workshop was attended by over 30 participants including a representative from the SE4ALL Ghana secretariat, SPIS installers, agric. extension officers, farmers, and NGOs.

Presentations were made on various components of the manual. Topics discussed included solar as a resource, agricultural requirements for solar irrigation, components of a solar PV powered irrigation system.

The workshop participants reviewed irrigation related case studies which required that they advise subjects on the most appropriate interventions to make under certain specific scenarios.

The participants made a field visit to a SE4ALL supported solar PV powered irrigation scheme at Datoyili in Tamale to test the manual developed and collect data on the SPIS.



**Participants with GFA Consulting Group and staff of GIZ**

### PROFILES OF IMPROVED COOKSTOVES PRODUCERS (Continued)

Below is a continuation of the profiles of improved cookstoves producers visited by the SE4ALL secretariat in the first quarter of 2016.

#### MAN AND MAN ENTERPRISE

Mr. Michael Agyei, founder of Man and Man Enterprise holds a Bachelor of Science in Physics from Kwame Nkrumah University of Science and Technology. He began his working life as a metal worker under the training of his father. The skills he acquired made it easy for him to go fully into cookstoves manufacturing after participating in a training programme organised by Relief International for artisans.

Man and Man Enterprise was established in 2010. It manufactures ceramic lined improved charcoal stove called Holy Cook. It also manufactures ceramic liners for its own use and sells the excess to other local stove manufacturers.

The Enterprise has successfully registered its

first carbon project (47 000t carbon per CPA) and is expected to disseminate 20,000 stoves per year for three years. The estimated carbon-saving potential of the stove is 2.5 tonnes per stove.

#### Ceramic Making

Man and Man ceramic liners are made from clay, sand and saw dust in the ratio of 10:5:5, respectively. The materials are poured into a rectangular dug-out trench in layers: first, 20 portions of the clay, followed by 10 portions of the sand and 10 portions of the saw dust.

The materials are mixed manually in the trench with a shovel, topped with water and left to stand for two days to soften. On the third day, the soaked material is mixed in a mixer to get an even distribution of the clay, sand and saw dust.



**The SE4ALL team with Mr. Michael Agyei, General Manager, Man and Man (middle)**

It is then rolled into balls and molded in a bowl coated with wood ash to prevent it from sticking to the bowl. Holes are then punched into the bottom part of the liner in circular array to serve as air inlet for efficient burning of the charcoal. The holes also allow for safe disposal of wood ash into the ash collection chamber of the stove.

The liner is baked for 18 hours (in an oven which has a carrying capacity of 2000 liners) and air-dried for a week. It is then ready to install in the stove body.

Man and Man Enterprise has a staff strength of 18 persons: 7 ceramic workers, and 11 stove producers. Its production capacity is 30,000 stoves per year.

#### Challenges

Understaffing and limited funds to increase production capacity.



**Oven showing an array of baked liners**



**The finished product: Holy Cook stove**

## TREES FOR THE FUTURE

**Trees for the future** is an American NGO established in 2005, to implement a project that promotes the establishment of sustainable woodlot for cooking and the use of improved firewood stoves. The organisation currently focuses on three main areas: stove development, education and agriculture. Mr. George Ansah is the Director of Trees for the Future.

### Cook Stove Sector

Trees for the Future started building improved institutional woodstove for agro-processing activities like pito brewing, palm oil cooking and general commercial cooking in 2005. The organisation has built improved and energy efficient mud-stoves in the Ashanti, Brong Ahafo and Volta Regions of Ghana.

### Capacity Building

Trees of the Future engages University students to research into and develop new stove products. The students are equipped with information about cookstoves, efficiency features and requirements, after which they are challenged to come out with their own stove designs.

### Stove Finance

The average cost of a double chamber mud stove with chimney is Gh₵500.00 and the single stove with chimney is Gh₵250.00. Trees for the Future operates credit and outright payment schemes to promote its stoves.

Customers who opt for a credit scheme make a 50% deposit for the stove to be constructed for them. The balance is paid over a period of one month.

## Challenges

- \* Reluctance of new users to switch from the use of traditional inefficient stove to an improved stove
- \* Poor maintenance culture resulting in the development of cracks



A double and single chamber improved mud stove with chimney constructed by Trees for the Future

## Future Outlook

Trees for the Future is currently working on a prototype institutional stove for "Fante kenkey" sellers. The stove is composed of clay lining and a metal case.



Prototype stove for "Fante kenkey" sellers

## Contributors

- \*Christian OSAFO, Global Alliance for Clean Cookstoves, Accra
- \*Ebenezer ASHIE, Energy Commission, Accra
- \*George ANSAH, Trees for the Future, Wioso
- \*Kwabena A. OTU-DANQUAH, Energy Commission, Accra
- \*Michael AGYEI, Man and Man Enterprise, Kumasi
- \*Michael Kofi ABROKWA, Energy Commission, Accra
- \*Samuel ADOBOE, GIZ, Accra
- \*Paula EDZE, Energy Commission, Accra



GHANA SE4ALL SECRETARIAT

C/O Energy Commission  
Ghana Airways Avenue  
PMB, Accra  
Phone: +233 302 813756  
Fax: +233 302 813764  
E-mail: pedze@energycom.gov.gh

Link to the Ghana SE4ALL Action Plan: <http://energycom.gov.gh/files/SE4ALL-GHANA%20ACTION%20PLAN.pdf>